

ASIATRIB & CICT2024



7th ASIA INTERNATIONAL CONFERENCE ON TRIBOLOGY &
9th CHINA INTERNATIONAL CONFERENCE ON TRIBOLOGY
September 14-18, 2024 Tianjin, China

PROGRAMME



ORGANIZATION

Hosted by



中国机械工程学会摩擦学分会
Chinese Tribology Institute, CMES

Organized by



清华大学 天津高端装备研究院
TIANJIN RESEARCH INSTITUTE FOR ADVANCED EQUIPMENT, TSINGHUA UNIVERSITY

Co-organized by



西南交通大学
Southwest Jiaotong University



清华大学高端装备界面科学与技术全国重点实验室
State Key Laboratory of Tribology in Advanced Equipment

HWATSING 华海清科



河南省科学院 材料研究所
HENAN ACADEMY OF SCIENCES Institute of Materials



中国机械总院集团武汉材料保护研究所有限公司
China Academy of Machinery Wuhan Research Institute of Materials Protection Co., Ltd.



河南科技大学 高端轴承摩擦学技术与应用国家地方联合工程实验室
National United Engineering Laboratory for Advanced Bearing Tribology, Henan University of Science and Technology



中国科学院
兰州化学物理研究所
LANZHOU INSTITUTE OF CHEMICAL PHYSICS

Welcome Message From Conference Chair

Dear Colleagues and Friends:

Chinese Tribology Institute, CMES cordially invites and welcomes you to the 7th Asia International Conference on Tribology (ASIATRIB2024) & 9th China International Conference on Tribology (CICT2024). The joint conference will take place in Tianjin, China, from September 14 to 18, 2024. During the conference, brilliant and pioneering ideas could be shared among academicians, researchers, engineers and students. The conference can also build a bridge between academia and industry.

Asia International Conference on Tribology (ASIATRIB) is a grand international event under the auspices of the Asian Tribology Council (ATC), the union of the national tribology societies/institutions of Asia-Pacific countries such as China, Japan, Korea, India, Australia, Malaysia and others. The conference is held every four years with the involvement of scientists and engineers from both academia and industry. The 6th ASIATRIB was held from September 17 to 20, 2018 in Kuching, Sarawak Malaysia. The 7th ASIATRIB was planned to be held in September 2022 in Beijing, China, which was postponed because of the epidemic.

China International Conference on Tribology (CICT) is under the auspices of the Chinese Tribology Institute, CMES. CICT is also a mega international event and attracts broad participation of scientists and engineers from universities and the industry all around the world. Since 1993, the CICT has been successfully held for 8 times, 1st (Beijing, 1993), 2nd (Beijing, 1998), 3rd (Beijing, 2001), 4th (Xi'an, 2004), 5th (Beijing, 2008), 6th (Lanzhou, 2011), 7th (Xuzhou, 2014), and 8th (Beijing, 2017, with the WTC 2017 held at the same time). The 9th CICT was planned to be held from September 15 to 18, 2020 in Chengdu, China, which was postponed because of the epidemic.

We look forward to meeting tribology colleagues around the world in the historical and vibrant city of Tianjin in September 2024.



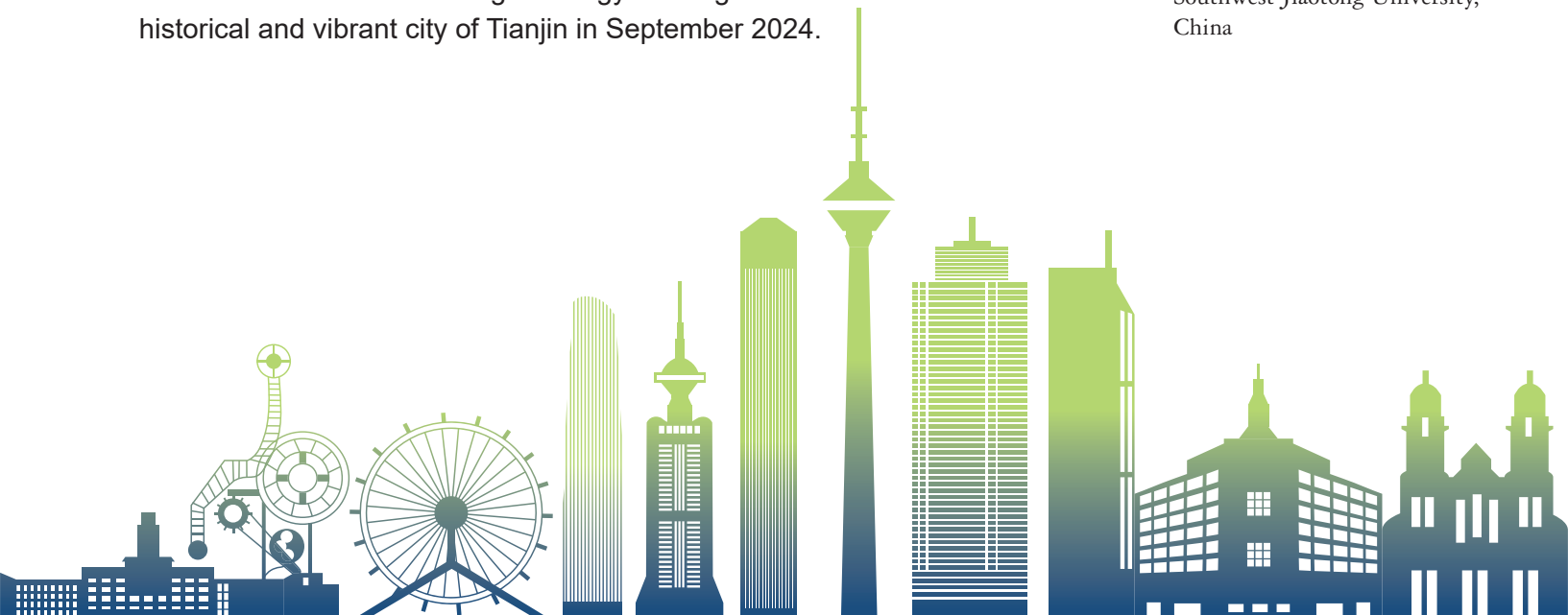
Conference Chair

Jianbin Luo
Tsinghua University,
China



Conference Co-Chair

Zhongrong Zhou
Southwest Jiaotong University,
China





International
Tribology
Council

Office of the President

International Tribology Council
C/o Empa, Überlandstrasse 129
8600 Dübendorf
Switzerland

Prof. em. Dr. Nicholas D. Spencer

President, ITC

www.itctribology.net**To the future attendees of the 7th ASIATRIB and 9th CHINATRIB****August 27, 2024**

7th ASIA INTERNATIONAL CONFERENCE ON TRIBOLOGY & 9th CHINA INTERNATIONAL CONFERENCE ON TRIBOLOGY

Dear Colleagues:

It is with great pleasure that, in the name of ITC, I will be able to welcome you to 7th ASIATRIB and 9th CHINATRIB in the historical city of Tianjin.

The ITC exists to facilitate communication between tribologists worldwide, and this conference, with its many international participants, will be an excellent demonstration of this principle. We also are responsible for ensuring that international congresses (the World Tribology Congress, WTC) take place at regular intervals, and I remind you that the next WTC will take place in Rio de Janeiro, Brazil (20-25 September, 2026).

This conference happens in a period of crises: geopolitical and climatic. While we, as tribologists, can only hope that the politicians can solve the former, we hold some of the keys to the latter. Whether it be in the design of better lubricants to reduce CO₂ emissions and lower energy consumption or the design of better tribological systems to improve the reliability of wind turbines, tribologists can play a very significant role in meeting net-zero and sustainability goals.

Despite our importance in solving some of these vital issues, our role as tribologists is often invisible. We have a responsibility to educate not only the public as to the criticality of tribology, but also a significant number of engineers (especially non-mechanical engineers). Tribology should form a part of all engineering curricula, and high-school teachers should incorporate tribological projects into their school programs. Tribology societies, world-wide, have a responsibility to the field to implement such activities.

I look forward to meeting many of you and enjoying many presentations at the exciting conference that the organizers have planned. Please enjoy the conference and the days of intellectual stimulation in fascinating surroundings.

Sincerely,

**Nicholas D. Spencer**

President,
International Tribology Council



CONTENTS

01	COMMITTEES AND ORGANIZERS	04
02	GENERAL INFORMATION	06
03	PLENARY SPEAKERS	11
04	PROGRAM OVERVIEW	21
05	FLOOR PLAN	26
06	USEFUL INFORMATION	31
07	SYMPOSIUMS	34
08	CONFERENCE PROGRAM	39
09	POSTER TIME	105
10	AUTHOR INDEX	115
11	SPONSOR & EXHIBITION	130



COMMITTEES AND ORGANIZERS

Academic Committee



Chair
Weimin Liu



Co-Chair
Shirong Ge



Co-Chair
Xinping Yan

Academic Committee Members

Chenghui Gao (China)

Daniele Dini (UK)

Feng Guo (China)

Huawei Chen (China)

Jianning Ding (China)

Kun Liu (China)

Ming Li (China)

Qihua Wang (China)

Xing Huang (China)

Yonggang Meng (China)

Yu Hou (China)

Zhijun Zhang (China)

Noritsugu Umehara (Japan)

Chengqing Yuan (China)

Dekun Zhang (China)

Guobiao Wang (China)

Irina G. Goryacheva (Russia)

Jun Hong (China)

Liping Wang (China)

Oliver Koch (Germany)

Tianmin Shao (China)

Xudong Peng (China)

Jianhua Zhang (China)

Yunfei Chen (China)

Zhiwu Han (China)

Hongbo Zeng (Canada)

Dae-Eun Kim (Korea)

Deli Duan (China)

Haidou Wang (China)

Jian Li (China)

Kexing Song (China)

Liqin Wang (China)

Ping Huang (China)

Xianghui Meng (China)

Ying Liu (China)

Yongzhen Zhang (China)

Zhendong Dai (China)

Zhongmin Jin (China)

Advisory Board

Darong Chen (China)

Siwei Zhang (China)

Yuanzhong Hu (China)

Luquan Ren (China)

Wanzhen Gao (China)

Yuanzhong Lei (China)

Qunji Xue (China)

Youbai Xie (China)

Yuming Wang (China)

Organization Committee



Chair
Xinchun Lu



Co-Chair
Jiadao Wang



Co-Chair
Feng Zhou



Co-Chair
Linmao Qian



Co-Chair
Kali Gu

Organization Committee Members

Aiying Wang

Haitao Duan

Junyan Zhang

Pingping Yao

Youxi Lin

Dagang Wang

Jianmei Wang

Le Gu

Shizhong He

Zhiguang Guo

Fangli Duan

Jiaxin Yu

Minghao Zhu

Wenhu Xu

Zhinan Zhang

Fanming Meng

Jibin Pu

Patrick Wong

Xiuqin Bai

Zuankai Wang

Secretary General

Yongyong He

Zhimin Chai

Daoai Wang

Liang Jiang

GENERAL INFORMATION

CONFERENCE VENUE

Society Hill Conference & Resort Hotel

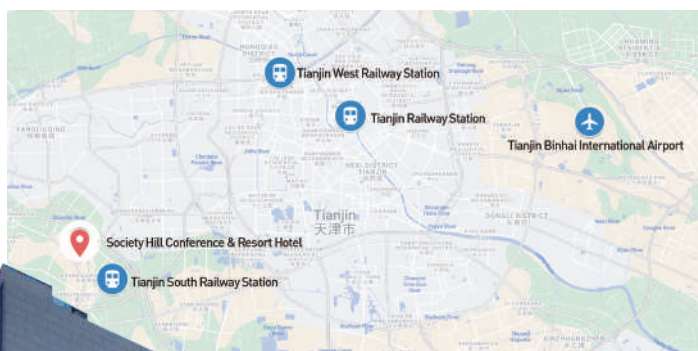
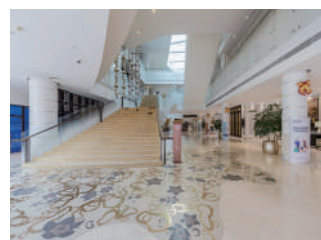
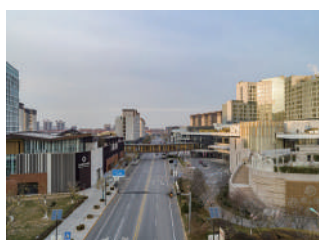
天津社会山国际会议中心酒店

Add: No. 198 Zhijing Road, South Railway Station, Xiqing District, Tianjin, China
(天津市西青区南站知景道198号)

Tel: +86 (0)22 5803 8666

Located near Tianjin South Train Station, the hotel is quite convenient for transportation.

The hotel also boasts necessary facilities for conferences of different sizes with its 708 rooms of various categories, 2 grand ballrooms of 4000 square meters on the 1st and 3rd floors respectively, and 50 multi-functional rooms. High-speed Wi-Fi is available.



Airport:

Tianjin Binhai International Airport:
43.40 km (50-60 mins drive)



Train Station:

Tianjin South Railway Station: 3 km (8 mins drive)
Tianjin West Railway Station: 23 km (40 mins drive)
Tianjin Railway Station: 28 km (46 mins drive)



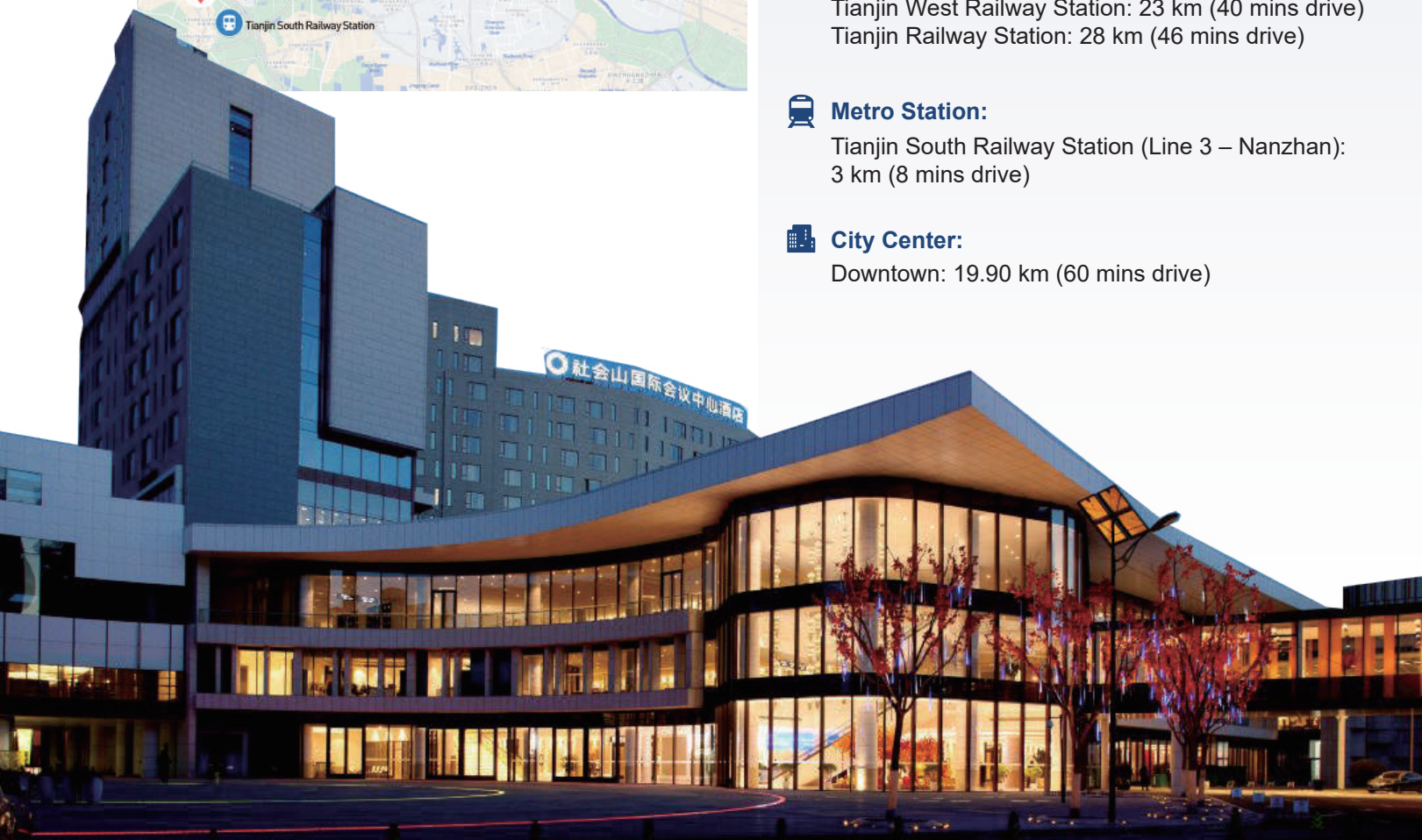
Metro Station:

Tianjin South Railway Station (Line 3 – Nanzhan):
3 km (8 mins drive)



City Center:

Downtown: 19.90 km (60 mins drive)



HOW TO GET TO THE CONFERENCE VENUE

Tips for Transportation

1. You may change money at the Banks or Money Exchange at the airport beforehand since you need Chinese money (RMB) to pay for the means of transportation.

Or you can use mobile payment like WeChat Pay or Alipay like locals, please check the Guide to Payment Services in China for your reference (On the conference's official website <http://www.asiatrib-cict2024.com/> – General Info – Travel Tips.)

2. Kindly note that all the time is subject to traffic conditions.

From Tianjin Binhai International Airport: 43.40 km

- By Taxi: (Highly Recommended) – about 50-60 mins drive

Taxi Fare about CNY 140/USD 20 in total, the cost is subject to traffic conditions

- By Metro and Bus: - about 1.5 hours

→ Take Metro Line 2 (Caozhuang Direction – 曹庄方向)

→ Transfer at Tianjin Railway Station (天津南站) to take Metro Line 3 (Nanzhan Direction – 南站方向)

→ Get off at Tianjin South Railway Station (walk out from Exit A) - 天津南站A出口

→ Walking about 350 meters, take Bus 312 Line A or Bus 758

→ Get off at She Hui Shan Guang Chang Station (社会山广场站)

→ Walking about 20 meters to the venue

Tickets Cost: Total CNY 7/ USD 1 in total

Service Hours: 06:00-22:30

From Tianjin Railway Stations

There are three main railway stations in Tianjin. They are Tianjin South Railway Station, Tianjin West Railway Station, and Tianjin Railway Station. Please kindly refer to the transfer information below.

Railway Station	Dist.	Taxi (Highly Recommended)	Metro and Bus
Tianjin South Railway Station	3km	About 8 mins drive About CNY 13/ USD 1.8	About 20-30 mins, about CNY 2/USD 0.3 → Take Bus 312 Line A or Bus 758 → Get off at She Hui Shan Guang Chang Station (社会山广场站) → Walking about 20 meters to the venue

Railway Station	Dist.	Taxi (Highly Recommended)	Metro and Bus
Tianjin West Railway Station	23km	About 35-45 mins drive Fare about CNY 72/ USD 10	About 70-90 mins, about CNY 6/USD 0.9 Take Metro Line 6 (Lushuidao Direction - 渌水道站) → Transfer at Hong Qi Nan Lu Station (红旗南路站) to take Metro Line 3 (Nanzhan Direction - 南站方向) → Get off at Tianjin South Railway Station (walk out from Exit A) - 天津南站A出口 → Walking about 350 meters, take Bus 312 Line A or Bus 758 → Get off at She Hui Shan Guang Chang Station (社会山广场站) → Walking about 20 meters to the venue
Tianjin Railway Station	28km	About 45-60 mins drive Fare about CNY 87/ USD 12	About 60 mins, about CNY 6/USD 0.9 → Take Metro Line 3 (Nanzhan Direction - 南站方向) → Get off at Tianjin South Railway Station (walk out from Exit A) - 天津南站A出口 → Walking about 350 meters, take Bus 312 Line A or Bus 758 → Get off at She Hui Shan Guang Chang Station (社会山广场站) → Walking about 20 meters to the venue

LIABILITY

The organizers cannot accept liability for any personal accidents, loss of belongings, or damage to the private property of participants and accompanying persons that may occur during the Conference.



CURRENCY, EXCHANGE AND PAYMENT METHODS IN CHINA

Chinese Currency

Renminbi (人民币) or RMB is the official currency of China, and it means “people’s currency” in Chinese. The basic unit of RMB is yuan (元), and the sign of yuan is ¥. CNY is the abbreviation of Chinese yuan, which is also been used widely to refer to Chinese currency.

Currency Exchange

After arriving in China, you can find many places to exchange Chinese currency, such as the exchange vendors in the major international airports, hotels, offices of local banks, and ATMs across the region. Exchanging major international cash, such as U.S. Dollars, Euros, Pounds, etc. into Chinese Yuan is not difficult in China. The exchange rates are regulated; however, the commission fees are varied from different banks, hotels, and airports.

Payment Methods in China

Credit and debit cards may not cover all your expenses in China. With the widespread popularity of digital payments, many businesses no longer offer point-of-sale (POS) systems for credit and debit card users. However, you can still use your bank cards via POS systems at selected hotels, shopping malls, and larger restaurants. Cash is still widely accepted. It is also very reliable. You’d better always bring some cash with you including some small changes.

Digital payment is the norm in China, with Alipay and WeChat Pay leading the way. Since July 2023, they’ve started accepting international cards through their apps, though success may vary depending on the user’s country and bank.

ELECTRICITY

Voltage in China is 220V/50HZ. Hotels provide 220V and 110V (shavers only) power outlets. Please note that plug adapters and converters might be required.

SMOKING

Smoking in indoor public places has been banned in Tianjin since May 31, 2012, following the rolling out of the toughest-ever anti-smoking regulation in China. The regulation extends smoking bans to include all indoor public areas and workplaces, plus several outdoor areas, including schools, seating areas in sports stadiums, and hospitals where women or children are treated.

TIME

China covers five time zones. Beijing time (UTC + 08:00) is the only official time throughout the country; China Standard Time is 8 hours ahead of Greenwich Mean Time (GMT + 8). China does not operate Daylight-saving Time.

Punctuality is highly appreciated.

TRANSPORTATION

- Subway Recommended for independent travelers. Tianjin has 6 subway lines, connected to train stations, airports, cruise ports, shopping streets, and some attractions, usually operating from 6am to 11pm. You can take Lines 2, 3, and 9 to Tianjin Railway Station from which many attractions are within walking distance, such as Italian-Style Street, Wudadao, Ancient Culture Street, etc.
- Bus The public bus serves a wider area of Tianjin than the subway, but you need to do a lot of homework if you can't read and speak Chinese. Usually costs around CNY 2~20. There are buses to Beijing from Tianjin Tongsha Bus Station (天津通莎客运站).
- Taxi Cheap by Western standards, and sufficient when it is not rush hours. Recommended for short distance ride.

ACCOMMODATION



Hotel	Room Type	Room Rates
Conference Hotel	Twin Room	CNY430
Hot Spring Hotel	Twin Room	CNY430
City Hotel	Twin Room	CNY380
Manas Inn	Twin Room	CNY380

Notes:

- Rates include 6% tax per room per night.
- Rates include 1-2 breakfasts.

To book a room, please check the conference's official website <http://www.asiatrib-cict2024.com/> – General Info – Accommodation)

PLENARY SPEAKERS

Plenary Talk on Tribology in Asia

(Alphabetical order by last names)



Prof. Mohd Fadzli Bin Abdollah

MOHD FADZLI BIN ABDOLLAH, received his Bachelor of Engineering (Honors) in Mechanical Engineering and Master of Engineering (Mechanical) from Universiti Kebangsaan Malaysia (UKM) in 2004 and 2005, respectively. Later in 2011, he completed his Doctor of Engineering from Nagoya University, Japan.

Currently, he is the Dean and Professor at the Faculty of Mechanical Technology and Engineering (FTKM), Universiti Teknikal Malaysia Melaka (UTeM). Previously, he held various positions, including Deputy Dean (Academic), Deputy Dean (Research and Postgraduate Studies), Manager and Co-ordinator of Centre of Excellence (CoE), Head of Department (Diploma Studies) and Executive Member of Society of Engineering Education Malaysia (SEEM). Recently, he has been appointed as the President of Malaysian Tribology Society (MYTRIBOS), Deputy President of Asian Tribology Council (ATC) and Vice President of International Tribology Council (ITC).

His research interests include Tribology of Eco-Materials and Surface Engineering. He is the Editor-in-Chief of Jurnal Tribologi (Scopus/WoS index). He also serves on the Editorial Boards of various journals in the field of tribology. He has received 'Outstanding Paper Award 2017' by Emerald Publishing UK. In addition, he was recognized as the 'Outstanding Reviewer' for Tribology International (2017) and Energy (2018) by Elsevier. In conjecture, he is one of the key pioneers in developing the Green Tribology and Engine Performance (G-TriboE) group at UTeM.

He is one of the key person in organizing the series of Malaysian International Tribology Conferences (MITC) and Asia International Conference on Tribology 2018 (ASIATRIB2018), the mega event in the series of International Tribology Conferences under the auspices of MYTRIBOS.



Prof. Dae Eun Kim

Dr. Kim is a professor at the School of Mechanical Engineering at Yonsei University, Seoul, Korea. He received his M.S. and Ph.D. from Massachusetts Institute of Technology. He served as the President of the Korean Tribology Society as well as the Korean Society for Precision Engineering and Manufacturing. He is a fellow of the Korean Academy of Science and Technology and CIRP. Dr. Kim is also the Vice-President of Asia Tribology Council and Chair of IFToMM Member Organization for Korea. Dr. Kim serves in the editorial board of several journals related to tribology. His research interests are tribology, coatings, and micro-fabrication.



Prof. Pawel Podsiadlo

Dr. Pawel Podsiadlo is an Associate Professor in the School of Civil and Mechanical Engineering at Curtin University, Australia. His research focuses on new technologies for designing advanced surface textures to control wear and friction, developing systems for detection and prediction of wear damage and failures and analysing bone texture for early osteoarthritis in knee and hand joints. He has published over 80 journal papers and is a member of editorial boards and grant review panels. He is a Discipline Lead of Mechanical Engineering and a head of Tribology Laboratory.



Prof. Sujeet K Sinha

Dr. Sujeet K Sinha received his Master's degree from the Indian Institute of Science, Bangalore (1991) and PhD from Imperial College London (1994). Presently, he is working as a professor in the Department of Mechanical Engineering, Indian Institute of Technology Delhi. He has worked extensively in the fields of nanotribology, polymer tribology and tribological applications of polymer composites as bearing materials for general engineering and for bio-medical applications. He contributed to the use of polymeric soft coatings for hard substrates as a durable tribological solution. Presently he is working on innovating new polymeric material concepts for hip and knee implant applications. He has co-edited the first book on Polymer Tribology (2009) and edited a Handbook on Polymer Tribology (2018). He has published more than 150 journal papers and edited/co-edited several research books and special issues.

Before Dr. Sinha's present position, he was a Guest Researcher at the National Institute of Standards and Technology (NIST), Gaithersburg, USA (2000), a post-doctoral researcher at the Advanced Institute of Science and Technology (AIST), Tsukuba, Japan (2001), and a teaching faculty in the Department of Mechanical Engineering of the National University of Singapore (2001-2012).



Prof. Noritsugu Umehara

Dr. Noritsugu Umehara is a professor in Department of Micro-nano Mechanical Science and Engineering at Nagoya University in Japan. He has interests in both fundamental and applied aspects of manufacturing and tribology, especially in new polishing method of advanced ceramic using magnetic field and water lubrication of advanced ceramics. He began his carrier at the Tohoku University in 1988 as a research associate in the Department of Mechanical Engineering before coming assistant professor in 1993, associate professor in 1995 and move to Nagoya University as Professor in 2003.

He received a Bachelor, a Master and a Doctor of Engineering from Tohoku University, Sendai, Miyagi in 1983, 1985 and 1988, respectively.

He published research papers more than 200 in various journals, and hold 6 Patents on Magnetic Fluid Grinding and more than 20 Patents on Tribology. Dr.Umehara received the JSME Young Engineering award in 1991, 1995 LaRoux K. Gillespie Outstanding Young Manufacturing Engineer Award from the society of manufacturing engineers in 1995, F.W. Tayler Medal from the CIRP in 1995 and JSME paper award in 2010、2019 and 2022. He is member of the American Society of Mechanical Engineers (ASME), the Japan Society of Mechanical Engineers (JSME), the Japan Society for Precision Engineering (JSPE), the Japan Society of Tribologist(JAST) and the Japan Society for Grinding Engineering.

He was a President of Japanese Society of Tribologist in 2022.

He is Editorial Board Members as the following Journals of Journal of Engineering Tribology, Proceedings of the Institution of Mechanical Engineers Part J, Friction, Springer and Journal Tribologi,



Prof. Zhongrong Zhou

Prof. Zhongrong Zhou is a professor in the School of Mechanical Engineering at Southwest Jiaotong University. He received his Ph.D. from Ecole Centrale de Lyon in France in 1992, was a post-doct in Laval University in Canada and then an invited professor at Ecole Centrale de Lyon. Prof. Zhou's research focuses on friction and wear problems in mechanical systems, particularly in biotribology, fretting wear and fatigue, and the tribology of rail/wheel contact. He has published more than 300 papers in various international journals, seven monographs in Chinese and English. He has been continuously listed among Elsevier's highly cited Chinese scholars. Prof. Zhou currently serves as President of the Chinese Tribology Institute of the Chinese Mechanical Engineering Society, Vice President of the International Tribology Council, and Editor-in-Chief of the journal Biosurface and Biotribology.

Plenary Talk

(Alphabetical order by last names)

**Prof. Daniele Dini**

Professor Daniele Dini FREng holds a Chair in Tribology at Imperial College London is a chartered engineer and a Fellow of the IMechE, the Institute of Physics, and the STLE. He is internationally recognised as a leader in the development and application of computational methods for studying applied mechanics and tribological problems. His group is at the forefront of the development of multiscale and multidisciplinary high-fidelity approaches that capture the physics of critical interfaces, from the underlying molecular scale to the macroscale seen by engineer as performance, e.g. energy efficiency and reliability. He is currently a Shell/RAEng Research Chair in Complex Engineering Interfaces, and leads all advanced modelling research within the Group. He holds a research portfolio with individual funding of over £5M as PI and is and has been involved in research that attracted over £50M overall from industrial sponsors, (e.g. Bosch, Shell, SKF, Toyota, BASF, Procter & Gamble), national (e.g. EPSRC, MRC, NERC, Royal Society) and international (e.g. Horizon 2020, ARC) funding bodies. His group has developed many advanced modelling tools for the design of new materials and engineering solution, including ab-initio simulations and DFT, large scale atomistic and molecular dynamics simulations, dislocation dynamics, crystal plasticity and continuum, fluid/solid interfaces solvers across the scales and multiphysics modelling strategies. These scientific breakthroughs have also been recognised by the IMechE Donald Julius Groen Prize in 2018, the prestigious inaugural Peter Jost Tribology Award in 2021 and the Tribology Trust Silver Medal in 2022, as well as a number of other personal and group awards. His group performs fundamental research, while successfully supporting the application of tribology in industry, the strong links with industrial partners have led to the Imperial College President's Award and Medal for Excellence in External Collaboration and Partnerships (2017). Professor Dini has written more than 350 journal articles and has delivered more than 50 invited and keynote/plenary talks to discuss his innovative research in the last 10 years.



Prof. Xinchun Lu

Xinchun Lu, Chief Research Professor of the Department of Mechanical Engineering at Tsinghua University, Cheung Kong Scholar, Chairman and Chief Scientist of Hwatsing Technology Co. Ltd.

The research areas of Professor Xinchun Lu include micro/nano manufacturing, theory and application of micro/nano tribology on surface and interface. Professor Lu has been engaged in theoretical, technological, and equipment research related to the manufacturing of key Integrated Circuit equipment such as chemical mechanical polishing (CMP) and ultra-precision grinding. He has published over 200 papers and has been authorized over 100 patents. Furthermore, he has founded Hwatsing Technology Co. Ltd. which provides advanced 12-inch CMP equipment and ultra-precision grinder for IC manufacturing industries.

Honors and Awards of Professor Lu are as follows:

First Prize of National Technological Invention

Second Prize of National Natural Science Award

Second Prize of National Science and Technology Progress Award



Prof. Jean Michel Martin

Emeritus Professor Jean Michel Martin is a French Chemist engineer with a specialty on surface chemistry, surface analysis and tribochemistry. He belongs to the Laboratory of Tribology and System Dynamics (LTDS) at Ecole Centrale de Lyon, a French “Grande Ecole” of Lyon university. His research activities have been entirely devoted to tribology with more than 50 years of extensive experience in fundamental and applied research in tribology of thin films, gas phase lubrication, diamond-like coatings, boundary lubrication, anti-wear and extreme-pressure additives, friction modifiers, surface chemical analysis and more recently liquid superlubricity. In 2019, he received the Tribochemistry Award from the JAST in Japan and was awarded Tribology Gold Medal, the world’s highest award in tribology in recognition of his outstanding contributions to tribochemistry. He still works on applications of superlubricity in the real world.

· Peer Reviewed Journal articles: more than 350. Detailed list of papers is available at:

<https://scholar.google.de/citations?user=J76WAaQAAAAJ> or

https://www.researchgate.net/profile/Jean_Martin/publications

· Book Chapters: 10 (5 books as editor)

Number of oral presentations: 95 (40 of them invited, keynote or plenary)



Prof. Valentin Popov

Valentin L. Popov is full professor at the Technische Universität (TU) Berlin. He studied physics and obtained his doctorate in 1985 from the Moscow State Lomonosov University. 1985-1998 he worked at the Institute of Strength Physics and Materials Science of the Russian Academy of Sciences. After that, he was a guest professor in the field of theoretical physics at the University of Paderborn (Germany) from 1999 to 2002. Since 2002 he is the head of the Department of System Dynamics and the Physics of Friction at the TU Berlin. He has published over 400 papers in leading international journals and is the author of the book "Contact Mechanics and Friction: Physical principles and applications" which appeared in eleven editions in German, English, Chinese, Russian, Spanish, Japanese, French and Uzbek. He is the editor-in-chief of the Journal Frontiers in Mechanical Engineering/Tribology, member of editorial boards of many international journals and is organizer of more than 25 international conferences and workshops over diverse tribological themes. Prof. Popov is Honorary Professor of the Tomsk Polytechnic University, of the East China University of Science and Technology, and of the Changchun University of Science and Technology and Distinguished Guest Professor of the Tsinghua University. His areas of interest include tribology, nanotribology, tribology at low temperatures, biotribology, the influence of friction through ultrasound, as well as the numerical simulation of contact and friction, earthquakes, or synovial joints regenerative rehabilitation.



Prof. Qian (Jane) Wang

Qian Jane Wang obtained her Ph. D in Mechanical Engineering at Northwestern University in 1993 and is now the Joseph Cummings Professor there. Her research is mainly in the areas of contact/interfacial mechanics, tribological science and engineering. She served the professional communities as a member of Board of Directors of STLE during 2008-2009, Chair of the Program Committee of the 2008 STLE Annual Meeting, Chair of the 2011 ASME/STLE International Joint Tribology Conference. Her research work has resulted in nice best-paper awards from ASME and STLE. She was elected Fellow of the ASME in 2009 and STLE in 2007. She received the 2015 STLE International Award, the highest award of the society, and the 2024 ASME Mayo D. Hersey Award for distinguished and continued contributions over a substantial period of time to the advancement of the science and engineering of tribology. She was elected to the US National Academy of Engineering in 2023.



Prof. Feng Zhou

Dr. Feng Zhou is a full Professor and director of Lanzhou Institute of Chemical Physics, CAS and Director of State Key Laboratory of Solid Lubrication. He gained PhD in 2004 and spent three years (2005-2008) in the Department of Chemistry, University of Cambridge as a research associate. He has published more than 400 journal papers that received more than 34000 citations and has the H-index 100 according to googlescholar. His research interests include the biomimic surfaces/interfaces of soft matters, drag-reduction and antibiofouling, and bioinspired tribology, functional coatings. He has gained a number of awards including “Young Scholar Award in Tribology”, Chinese Engineering Institute, 2009; “National Young Excellence” Award from National Science Foundation of China, 2011; “Young Scholar Award of Chemistry”, Chinese Chemical Society, 2011 and “Outstanding Youth Award” of International Society of Bionic Engineering, 2013. He serves as editorial board member of Journal Fiber Bioengineering and Informatics, Tribology International, Tribology Online etc. In 2024, he won Peter Jost Tribology Award.

PROGRAM OVERVIEW

Program at a Glance

September 14, 2024	09:00-20:30	Registration
	10:00-16:50	Symposium 1
	18:00-20:00	Welcome Reception
September 15, 2024	07:30-18:30	Registration
	08:30-11:50	Opening Ceremony & Plenary Talk on Tribology in Asia
	13:30-18:25	Symposium 2 Technical Sessions
	15:20-16:20	Poster Session
	08:00-18:30	Exhibition
September 16, 2024	07:30-18:30	Registration
	08:30-09:50	Plenary Talk
	10:10-18:25	Symposium 2 Technical Sessions
	15:20-16:20	Poster Session
	08:00-18:30	Exhibition
September 17, 2024	07:30-18:30	Registration
	08:30-09:50	Plenary Talk
	10:10-18:25	Technical Sessions
	08:00-18:30	Exhibition
	18:30-21:10	Banquet
September 18, 2024	07:30-18:30	Registration
	08:30-09:50	Plenary Talk
	10:10-18:25	Technical Sessions
	08:00-18:30	Exhibition

Saturday, September 14, 2024

		Morning		Afternoon			
LOBBY	09:00-20:30 Registration						
Symposium 1: Modern Tribology: The Past, Present and Future							
CONFERENCE ROOM	10:00-10:05	10:05-11:55	11:55-13:30	13:30-15:00	15:00-15:10	15:10-16:40	16:40-16:50
	Opening Remarks	Plenary Lectures	Lunch Break (Moshi Restaurant)	Keynote Lectures	Coffee Break	Keynote Lectures	Closing Remarks
BANQUET HALL	18:00-20:00 Welcome Reception						

Sunday, September 15, 2024

	Morning				Afternoon		
LOBBY	07:30-18:30 Registration						
	08:30-09:00	09:00-09:50	09:50-10:10	10:10-11:50	11:50-13:30	13:30-15:20	15:20-16:20
CONVENTION HALL	Opening Ceremony	Plenary Talk		Plenary Talk			
							Coffee Break & Poster Session (Poster & Exhibition Hall)
						Track 1 - I: Friction and Lubrication	Track 1 - I: Friction and Lubrication
						Track 1 - II: Friction and Lubrication	Track 1 - II: Friction and Lubrication
						Track 1 - III: Friction and Lubrication	Track 1 - III: Friction and Lubrication
						Track 2: Wear and Fatigue	Track 2: Wear and Fatigue
						Track 3 - I: Coatings and Surfaces Engineering	Track 3 - I: Coatings and Surfaces Engineering
						Track 4: Tribo-chemistry and Lubricants	Track 4: Tribo-chemistry and Lubricants
						Track 5: Biotribology and Biomimetics	Track 5: Biotribology and Biomimetics
						Track 6: Nanotribology and Superlubricity	Track 6: Nanotribology and Superlubricity
						Symposium 2: Triboelectric Nanogenerators for Energy and Sensors	Symposium 2: Triboelectric Nanogenerators for Energy and Sensors
						Track 8: Aerospace and Ocean Tribology	Track 8: Aerospace and Ocean Tribology
						Track 9: Industry Tribology and Instruments	Track 9: Industry Tribology and Instruments

Monday, September 16, 2024									
Morning			Afternoon						
07:30-18:30 Registration									
LOBBY	08:30-09:50	09:50-10:10	10:10-12:05	12:05-13:30		13:30-15:20	15:20-16:20	16:20-18:25	
CONVENTION HALL	Plenary Talk	Coffee Break (Banquet Hall)							
3F Function Hall 1		Track 1 - I: Friction and Lubrication							
3F Function Hall 2		Track 1 - II: Friction and Lubrication							
3F Reception Hall		Track 1 - III: Friction and Lubrication							
4F Function Hall 3		Track 2: Wear and Fatigue							
4F Function Hall 5		Track 3 - I: Coatings and Surfaces Engineering							
2F Meeting Room 16		Track 4: Tribo-chemistry and Lubricants							
2F Meeting Room 15		Track 5: Biotribology and Biomimetics							
2F Meeting Room 17		Track 6: Nanotribology and Superlubricity							
4F Function Hall 6		Symposium 2: Triboelectric Nanogenerators for Energy and Sensors							
3F Meeting Room 30		Track 8: Aerospace and Ocean Tribology							
2F Meeting Room 13		Track 9: Industry Tribology and Instruments							
Coffee Break & Poster Session (Poster & Exhibition Hall)									
Track 1 - I: Friction and Lubrication									
Track 1 - II: Friction and Lubrication									
Track 1 - III: Friction and Lubrication									
Track 2: Wear and Fatigue									
Track 3 - I: Coatings and Surfaces Engineering									
Track 4: Tribo-chemistry and Lubricants									
Track 5: Biotribology and Biomimetics									
Track 6: Nanotribology and Superlubricity									
Symposium 2: Triboelectric Nanogenerators for Energy and Sensors									
Track 8: Aerospace and Ocean Tribology									
Track 9: Industry Tribology and Instruments									

Afternoon

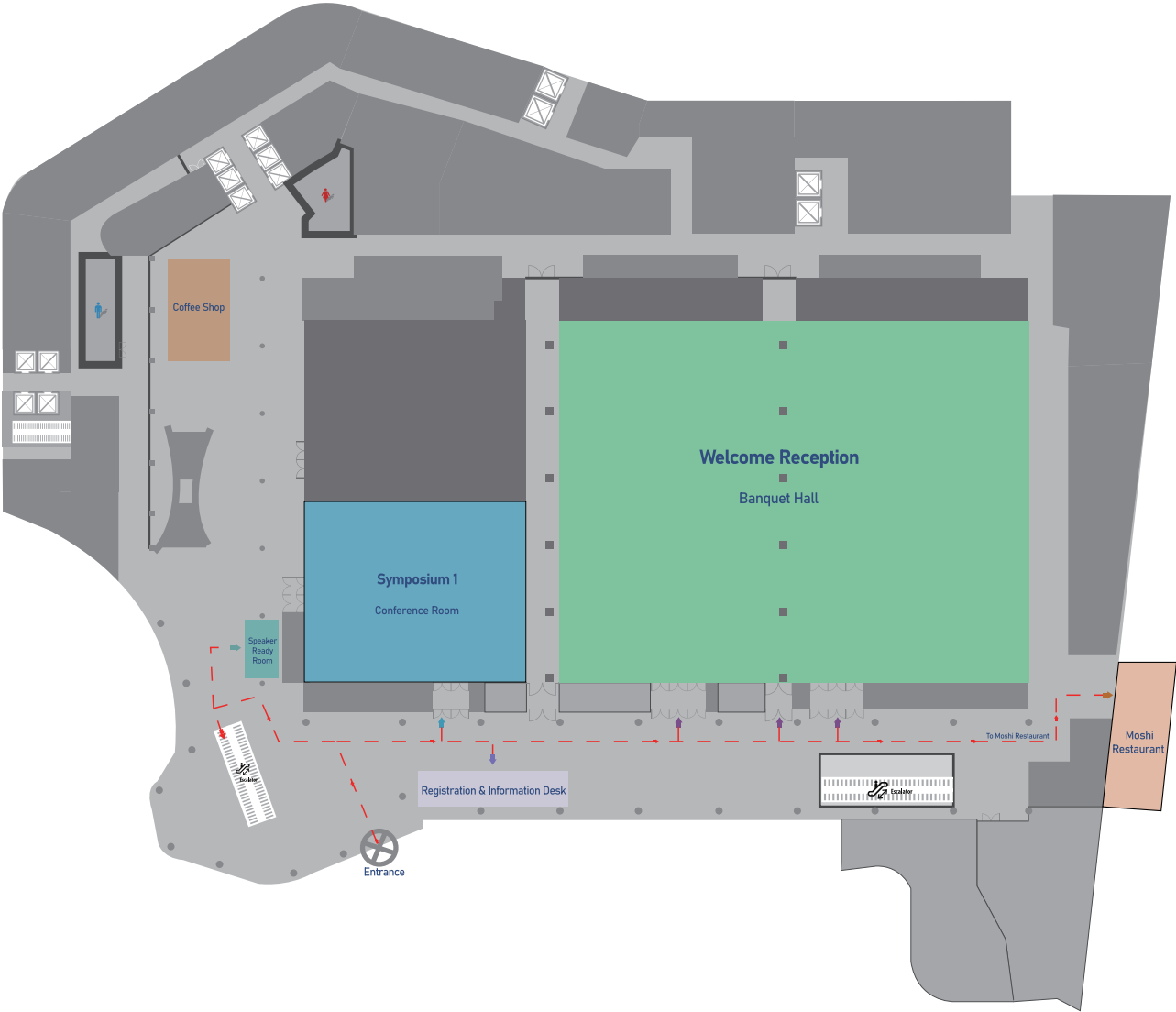
Morning		Afternoon	
07:30-18:30 Registration			
LOBBY			
	08:30-09:50	09:50-10:10	10:10-12:05
CONVENTION HALL	Plenary Talk	12:05-13:30	
3F Function Hall 1		Track 1 - I: Friction and Lubrication	
3F Function Hall 2		Track 1 - II: Friction and Lubrication	
3F Reception Hall		Track 1 - III: Friction and Lubrication	
4F Function Hall 3		Track 2: Wear and Fatigue	
4F Function Hall 5		Track 3 - I: Coatings and Surfaces Engineering	
2F Meeting Room 16		Track 4: Tribo-chemistry and Lubricants	
2F Meeting Room 15		Track 5: Biotribology and Biomimetics	
2F Meeting Room 17		Track 6: Nanotribology and Superlubricity	
4F Function Hall 6		Track 7: Tribology in New Energy System	
		Track 3 - II: Coatings and Surfaces Engineering	
2F Meeting Room 13		Track 9: Industry Tribology and Instruments	
BANQUET HALL	18:30-21:10 Banquet		

Wednesday, September 18, 2024						
	Morning				Afternoon	
LOBBY	07:30-18:30 Registration					
	08:30-09:50	09:50-10:10	10:10-12:05	12:05-13:30	13:30-15:20	15:20-15:40
CONVENTION HALL	Plenary Talk	Lunch Break (Banquet Hall)				
3F Function Hall 1		Track 1 - I: Friction and Lubrication	3F Function Hall 1 Track 1 - I: Friction and Lubrication			
3F Function Hall 2		Track 1 - II: Friction and Lubrication				
3F Reception Hall		Track 1 - III: Friction and Lubrication	3F Reception Hall Track 1 - III: Friction and Lubrication			
4F Function Hall 3		Track 2: Wear and Fatigue	4F Function Hall 3 Track 2: Wear and Fatigue			
4F Function Hall 5		Track 3 - I: Coatings and Surfaces Engineering	4F Function Hall 5 Track 3 - I: Coatings and Surfaces Engineering			
2F Meeting Room 15		Track 5: Biotribology and Biomimetics	2F Meeting Room 15 Track 5: Biotribology and Biomimetics			
2F Meeting Room 17		Track 6: Nanotribology and Superlubricity	2F Meeting Room 17 Track 6: Nanotribology and Superlubricity			
4F Function Hall 6		Track 7: Tribology in New Energy System	4F Function Hall 6 Track 7: Tribology in New Energy System			
						Track 7: Tribology in New Energy System

FLOOR PLAN

1F Floor Plan

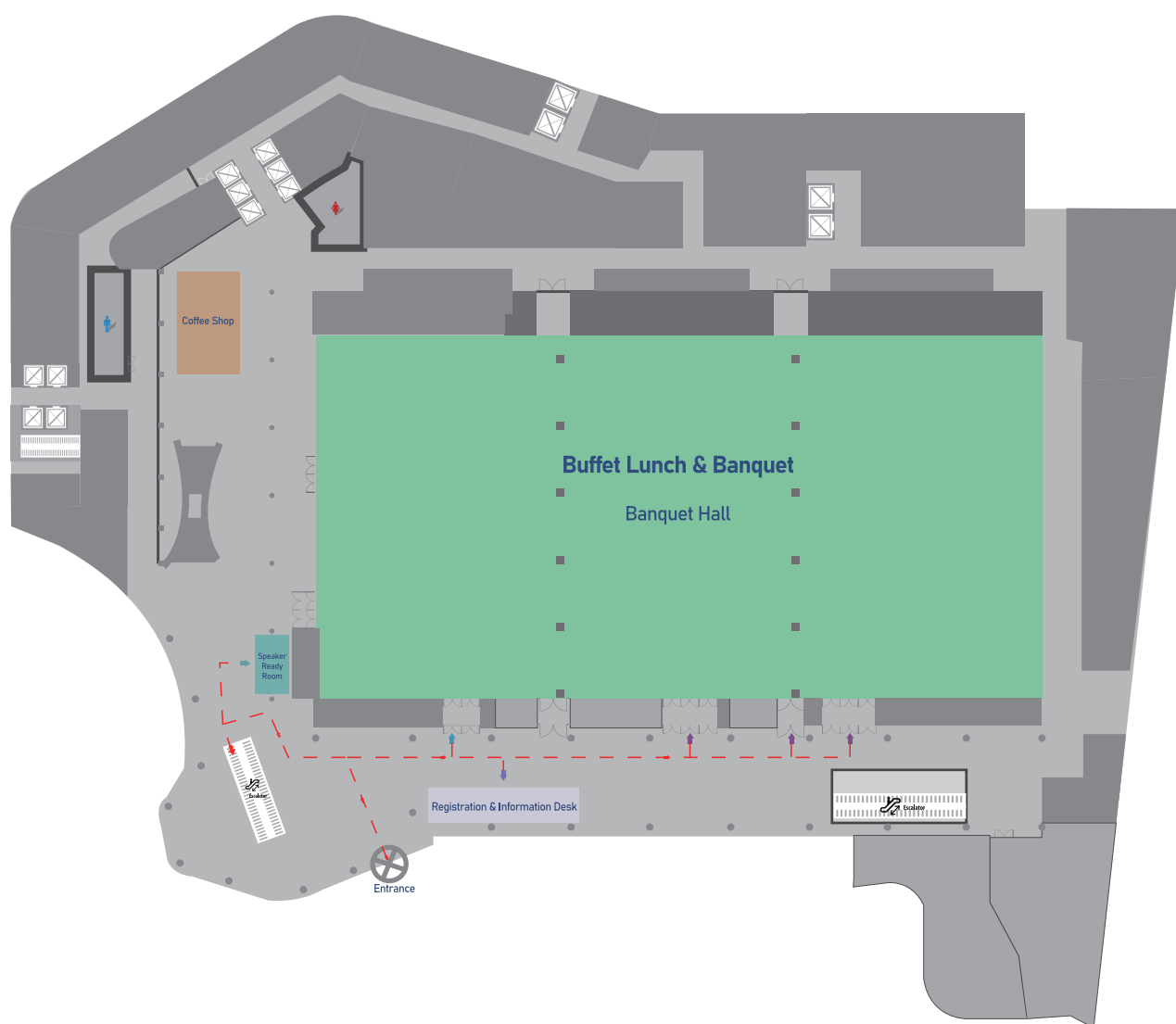
September 14, 2024



Registration & Information Desk	1F Lobby
Speaker Ready Room	1F Lobby
Symposium 1	1F Conference Room
Welcome Reception	1F Banquet Hall
Lunch Box	1F Moshi Restaurant

1F Floor Plan

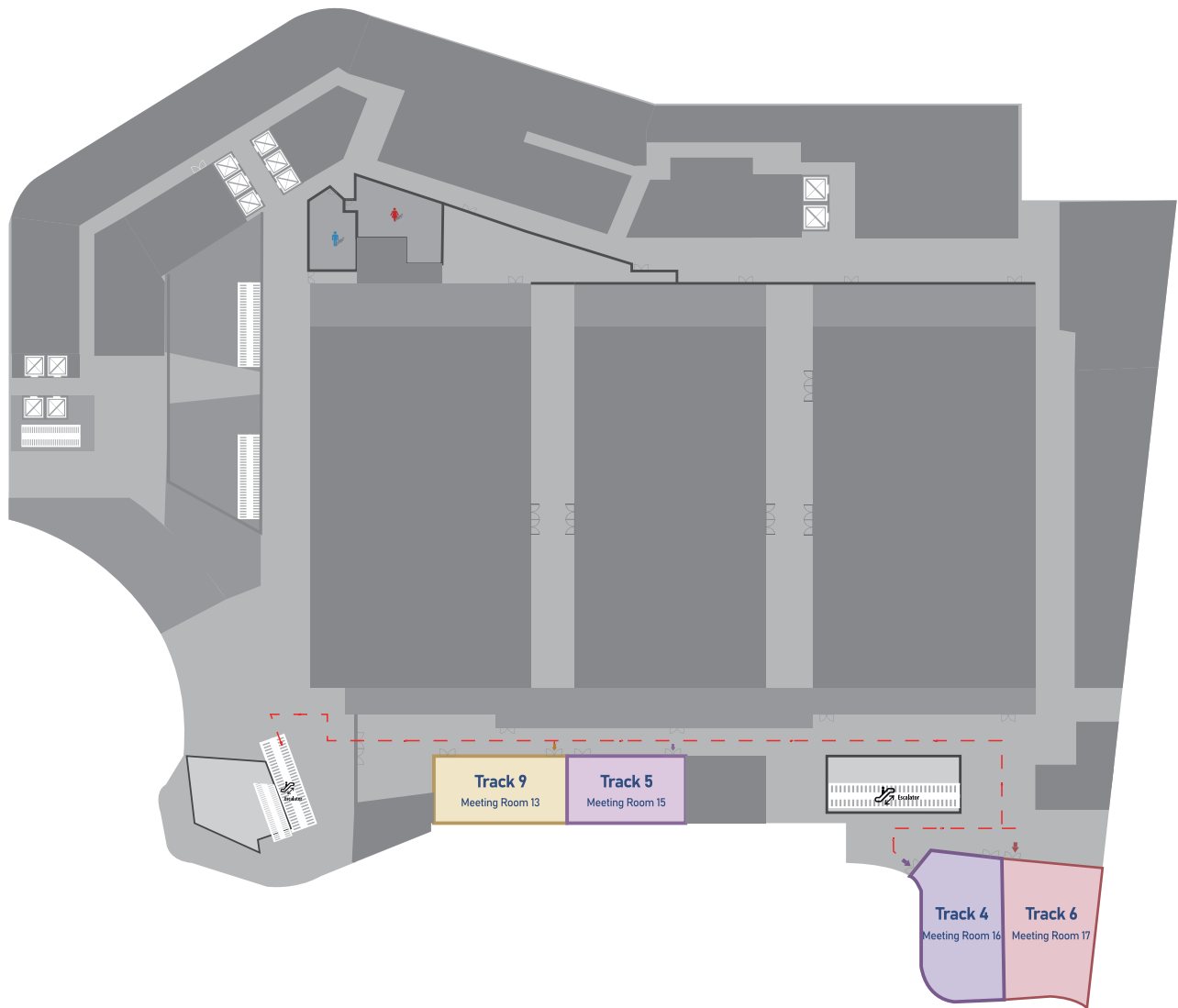
September 15-18, 2024



Registration & Information Desk	1F Lobby
Speaker Ready Room	1F Lobby
Buffet Lunch & Banquet	1F Banquet Hall

2F Floor Plan

September 15-18, 2024



Track 4 2F Meeting Room 16

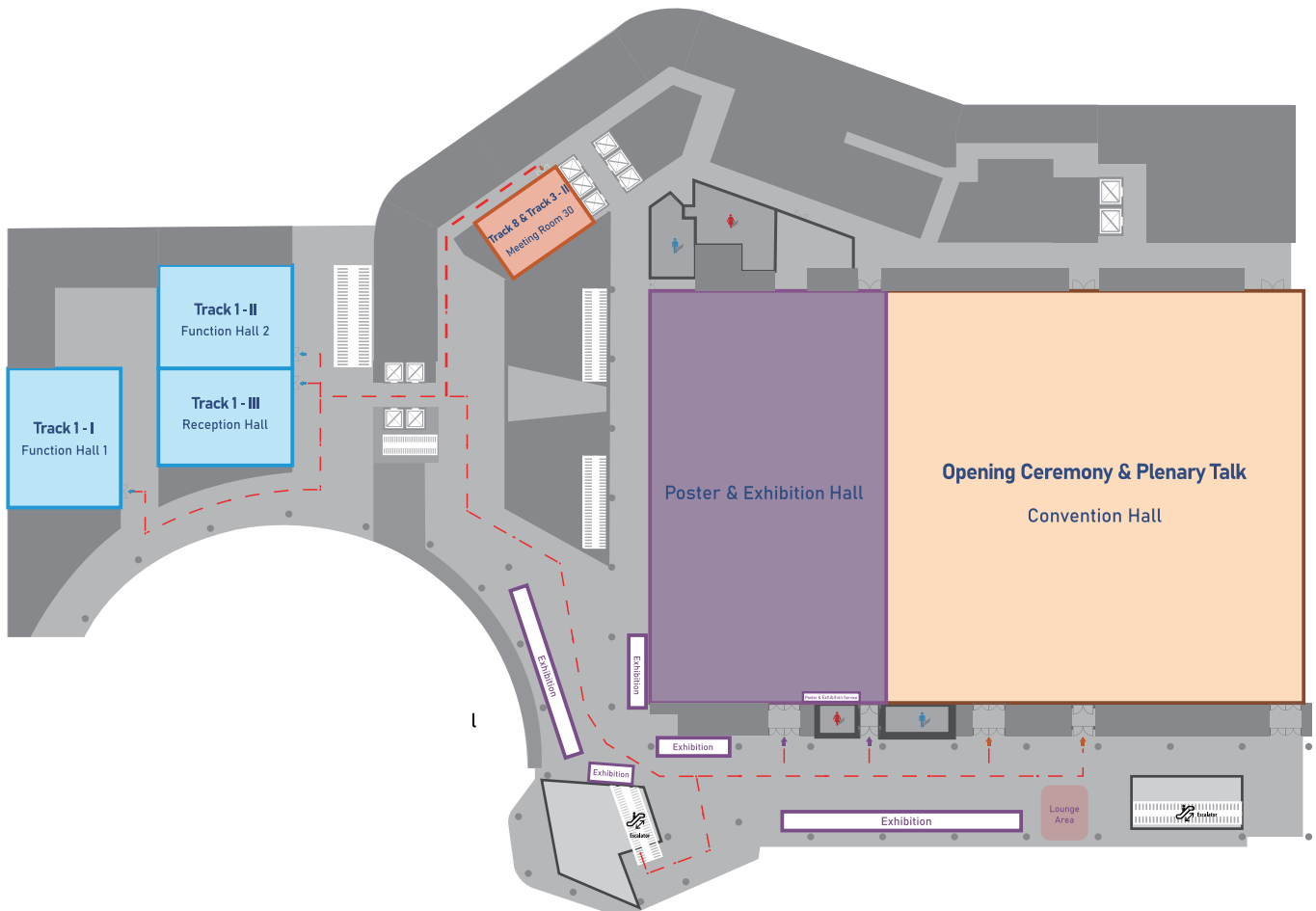
Track 5 2F Meeting Room 15

Track 6 2F Meeting Room 17

Track 9 2F Meeting Room 13

3F Floor Plan

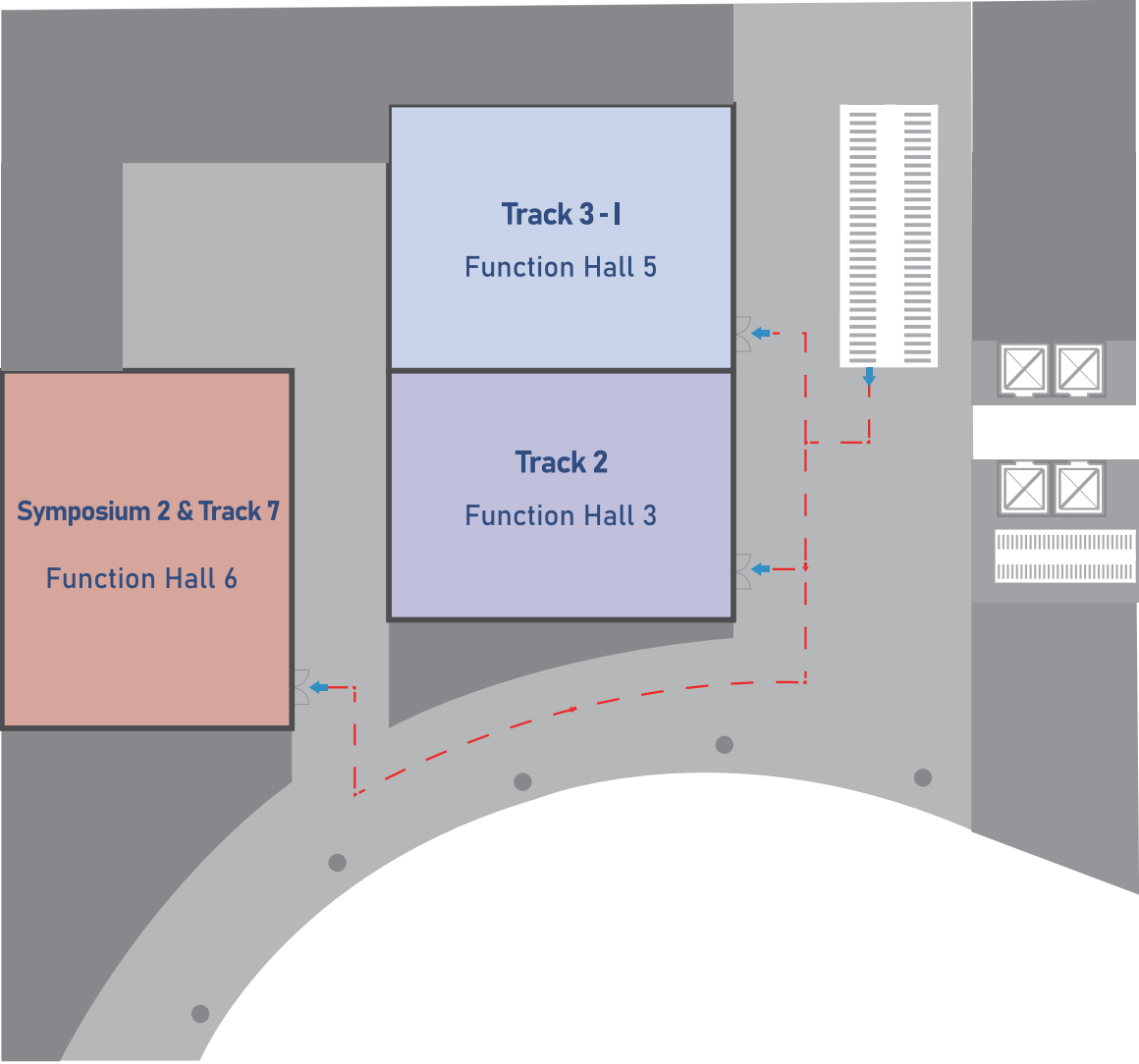
September 15-18, 2024



Opening Ceremony & Plenary Talk	3F Convention Hal
Poster & Exhibition	3F Poster & Exhibition Hall
Track 1-I	3F Function Hall 1
Track 1-II	3F Function Hall 2
Track 1-III	3F Reception Hall
Track 8 & Track 3-II	3F Meeting Room 30

4F Floor Plan

September 15-18, 2024



Track 2	4F Function Hall 3
Track 3 -I	4F Function Hall 5
Symposium 2 & Track 7	4F Function Hall 6

USEFUL INFORMATION

Wi-Fi



Free Wi-Fi for participants.

Wi-Fi Name: shehuishan, no password needed.

Registration & Information Desk

Date	Opening Hours	Location
September 14, 2024	09:00-20:30	1F Lobby
September 15-18, 2024	07:30-18:30	

Speaker Ready Room

Date	Opening Hours	Location
September 14, 2024	09:00-20:00	Close to the Registration Area on 1F Lobby
September 15-18, 2024	07:30-18:00	

Poster & Exhibition Service Desk

Date	Opening Hours	Location
September 15-18, 2024	07:30-18:30	3F Poster & Exhibition Hall

Lunch & Dinner

Date	Opening Hours	Location
September 14, 2024	11:55-13:30 Lunch Box	1F Moshi Restaurant
	18:00-20:00 Welcome Reception	1F Banquet Hall
September 15-18, 2024	12:05-13:30 Buffet Lunch	1F Banquet Hall
September 17, 2024	18:30-21:10 Banquet	1F Banquet Hall

Presentation Guideline

1. Oral Presentation

1) Format

- Files supported for presentation are Microsoft PowerPoint (PPT) and PDF. The presentations made on a MacBook should be converted to files that are compatible with the PC OS
- All oral speakers should format their presentations in 16:9 to better fill the screens.
- If you have music, video, or other Multimedia attachments in your slides, please test them at the Speaker Ready Room before your session(s) to ensure smooth playing.

2) Presentation Time

Plenary Talk on Tribology in Asia	25 mins presentation
Plenary Talk	40 mins presentation
Keynote Talk	30 mins total incl. 25 mins presentation and 5 mins Q & A
Invited Talk	25 mins total incl. 20 mins presentation and 5 mins Q & A
Oral Talk (from abstract)	20 mins incl. 15 mins presentation and 5 mins Q & A

3) Presentation file submission and testing

- It is recommended that each speaker come to the Speaker Ready Room to test the document at least 30 minutes before the session. For speakers who do not take the test, the time to copy your slides to the computer in the meeting room will be included in your presentation time.
- Speakers are suggested to bring along the presentation on a USB drive for submission and testing to the Speaker Ready Room.
- Please be sure to check your presentation for viruses before uploading.

4) Presentation suggestions

- Speakers are advised to arrive at the meeting room at least 10 minutes before the start of the session and introduce themselves to the Session Co-chair(s).
- Oral presenters may visit the meeting room to familiarise themselves with the equipment in the room or ask a technician if any questions. The technician in your meeting room could help you connect your laptop to the projector if you would like to give the presentation by using it. And please take an adapter and a USB drive with your slides copy as an option. Kindly note that the time spent on connecting your laptop to the projector will be included in your presentation time.
- Please discuss the material as reported in your submitted and approved abstract.
- Although each meeting room has a large enough LED screen/projection screen, it would be better to keep fewer words with larger font sizes on each page of your slides. In this way, audiences who sit away from the stage will get a better view of it.

5) Speaker Ready Room

Date	Opening Hours	Location
September 14, 2024	09:00-20:00	At the Registration Area on 1F
September 15-18, 2024	07:30-18:00	

2. Poster Presentation

1) Format

Each poster must be limited to 90cm (width) * 120cm (length) in size and designed in portrait orientation to fit the poster board. Authors should prepare the poster according to the poster template.



2) Poster Preparation

- The Conference Organizer will provide poster boards. The Poster Number will be shown on the left or right corner of each board.
- Poster presenters are responsible for printing their posters. To ensure a well-prepared poster session, posters must be up during the preparation period. The special tape for poster posting will be offered on-site to protect the board and the poster.
- Presenters can seek help from on-site staff or volunteers at the Service Center in terms of locating a specific posting board or obtaining the tools needed, etc.
- All presenters should stay by your poster to communicate with the audience throughout the poster sessions.

3) Poster Display Details

- Location of Poster Area: Convention Hall 1+2, 3F
- Schedule for Poster Sessions

Date	Time	Arrangement
September 15, 2024	Before 14:00	Putting up posters
September 15-16, 2024	15:20-16:20	Poster sessions & poster award on-site review
September 17, 2024	During Conference Banquet	Poster award ceremony
September 18, 2024	After 16:30	Time for take down

(Kindly note that the Conference will NOT collect the posters that are NOT taken down after 16:30 on September 18, 2024.)

4) Poster & Exhibition Service Desk

Date	Opening Hours	Location
September 15-18, 2024	07:30-18:30	3F Poster & Exhibition Hall

SYMPOSIUMS

Modern Tribology: The Past, Present and Future

Sept. 14, 2024 (Saturday)

Speakers (Alphabetical order by last names)

Prof. Shirong Ge



Shirong Ge, Professor of the School of Mechanical and Electrical Engineering at China University of Mining and Technology (Beijing), Academician of the Chinese Academy of Engineering, former Vice President of the World Tribology Council. Professor Shirong Ge has pioneered the theoretical approach to reliability in friction-based transportation and transmission systems, and established key technological equipment for heavy-duty deep mine hoisting and automated roadway transportation. Additionally, he has successfully tackled the pivotal technology of intelligent collaborative control and regulation in underground coal mine extraction and transportation. He has authored or co-authored over 300 academic papers, secured over 30 authorized invention patents, and published 5 academic books.

Professor Shirong Ge has gained a number of prestigious awards, including three Second Prizes of the “National Award for Technological Invention”, one Second Prize and one Third Prize of the “National Award for Science and Technology Progress”. He has gained a number of academic honors, including “the China Youth Science and Technology Award”, “the National Excellent Scientific and Technological Worker Award”, “the Ho Leung Ho Lee Science and Technology Progress Award”, and “the National Award for Innovation and Pioneering”.

Prof. Irina Goryacheva



Irina Goryacheva, Academician of the Russian Academy of Sciences (RAS), Head of Tribology Laboratory of the Ishlinsky Institute for Problems in Mechanics of RAS and Professor of Lomonosov Moscow State University, is a world leading expert in the field of contact mechanics and tribology. She is the President of the Russian National Committee in Theoretical and Applied Mechanics, President of the Russian Tribology Council, Member of RZD Scientific Council, a vice-President of International Tribology Council and a member of Bureau and General Assembly of IUTAM. Professor Goryacheva is the author of more than 250 publications including 7 monographs. She was awarded by RF Government Prize in the Field of Science and Technology (2006), World Gold Medal in Tribology (2009) and Sofia Kovalevskaya Prize of Russian Academy of Sciences (2024).

Academician Goryacheva is the Editor in Chief of the Journal Applied Mathematics and Mechanics, and a member of Editorial boards of the leading journals including Friction, Tribology Engineering, Nonlinear Mechanics, Frontiers in Mechanical Engineering, Physical Mezomechanics, and Friction and Wear.

Prof. Hideki Kawakatsu

Prof. Dr Hideki Kawakatsu Graduated from University of Tokyo and became Lecturer at the Institute of Industrial Science (IIS) of the University of Tokyo in 1990, then Associate Professor in 1992. From 1995 to 1997, he was on sabbatical as a visiting Professor at the Institute of Physics, University of Basel, and LPMO/CNRS, Besançon, France. He became Professor in 2004. He has served as Director of LIMMS (CNRS/IIS) and CIRMM(IIS). His research interests include Atomic Force Microscopy, NanoMachines, NanoTribology and Assisted Reproductive Technology (ART).

Prof. Jacob Klein

Jacob Klein is the Herman Mark Professor of Soft Matter Physics at the Weizmann Institute in Israel. From 2000-2007 he was the Dr. Lee's Professor of Chemistry at the University of Oxford and Head of its Physical and Theoretical Chemistry Department (2000-2005). His research interests have ranged from the dynamics and interfacial properties of polymers to the behaviour of confined fluids and biological lubrication. His honours include the High Polymer Physics Prize of the American Physical Society (1995), the 2011 Soft Matter and Biophysical Chemistry Award of the UK Royal Society of Chemistry, the 2012 Tribology Gold Medal, the 2015 David Turnbull Lectureship Award of the Materials Research Society, the 2017 Liquid Matter Prize of the European Physical Society, the 2019 Gold Medal of the Israel Chemical Society, the 2020 Rothschild Prize, the 2021 Irving Langmuir Award in Chemical Physics of the American Physical Society and the Overbeek Gold Medal of the European Colloid and Interface Society. In 2009 and 2017, he received ERC Advanced Grants. In 2013 he was elected to the European Academy and in 2016 he was elected to the Israel Academy of Science and Humanities.

Prof. Nicholas Spencer

Nicholas Spencer was born in the UK and educated in Cambridge University before going to the USA for a postdoc in UC Berkeley, followed by a decade in the US chemical industry. For the last thirty years he has been Professor of Surface Science and Technology at ETH Zurich, working on topics ranging from hip implants to lubricant additives, and is particularly known for his work on polymer-brush lubrication. He is Editor-in-Chief of Tribology Letters and the winner of the 2018 Tribology Gold Medal and the 2022 STLE International Award. Since January 2023 he has been President of the International Tribology Council.

Prof. Hongbo Zeng

Hongbo Zeng is a Professor in the Department of Chemical and Materials Engineering at the University of Alberta, a Fellow of the Academy of Science of the Royal Society of Canada, a Fellow of the Canadian Academy of Engineering, and a Tier 1 Canada Research Chair. He received his BSc and MSc from Tsinghua University and his PhD from the University of California, Santa Barbara. Zeng's research interests lie in colloid and interface science, functional materials, and nanotechnology, with a special focus on intermolecular and surface interactions in soft materials and engineering processes. He has published one book and over 500 peer-reviewed journal articles. His work has been recognized with many awards, such as the CSCHE Innovation Award of the Chemical Institute of Canada, the Killam Professorship, the NSERC Steacie Fellowship (presented by The Governor General of Canada), and the van der Waals Prize. He serves as an Editor for the journal *Advances in Colloid and Interface Science*, an Associate Editor for *Friction*, and a member of the Editorial Advisory Board of *Langmuir*.

Triboelectric Nanogenerators for Energy and Sensors

Sept. 15-16, 2024 (Sunday-Monday)

Speakers (Alphabetical order by last names)

Prof. Zhonglin Wang



Dr. Zhonglin Wang is the Director of the Beijing Institute of Nanoenergy and Nanosystems, Director, and Regents' Professor and Hightower Chair at Georgia Institute of Technology. Dr. Wang pioneered the nanogenerators field for distributed energy, self-powered sensors and large-scale blue energy. He coined the fields of piezotronics and piezo-phototronics for the third generation semiconductors.

Dr. Wang has received the Global Energy Prize (2023); The Albert Einstein World Award of Science (2019); Diels-Planck lecture award (2019); ENI award in Energy Frontiers (2018); The James C. McGroddy Prize in New Materials from American Physical Society (2014); and MRS Medal from Materials Research Soci. (2011). Dr. Wang was elected as a fellow of the US National Academy of Inventors, foreign academician of the Chinese Academy of Sciences, fellow of European Academy of Sciences, fellow of European Academy of Engineering, foreign fellow of Korea Academy of Science and Technology; academician of Academia of Sinica, International fellow of Canadian Academy of Engineering. Dr. Wang is the founding editor and chief editor of an international journal Nano Energy.

Prof. Haixia Zhang



Biography:

Dr. Haixia Zhang, Professor, School of Integrated Circuit, Peking University. Dr. Zhang is a pioneer and world leader for her outstanding research achievements and creativity in micro/nanotechnology. She authored and co-authored 300+ peer reviewed scientific articles on the prestigious journals. Dr. Zhang is the founder iCAN and iCANX Talks.

Dr. Zhang won numbers of Awards/Honors, including won National Invention Award of Science & Technology at 2006, Education Award at 2013 and 2017 in Beijing City, Geneva Invention Gold Medal at 2014. She was honored as the Excellence Teachers in Beijing City at 2017, Top10 supervisors in Peking University at 2017. She won the Medal of May Day in 2018. She won the 2nd prize of National Education Award 2018 and elected as the member of Innovation Education Committee in Chinese Ministry of Education at 2018. She was listed in Forbes Top 50 Female Scientists at China in 2020, Nano Energy Award 2021. 2022 Elsevier Most Cited Chinese Researchers, and 2023-2025 IEEE Distinguish Lecturer.

Prof. Hoon Eui Jeong

Prof. Hoon Jeong earned his Ph.D. in Mechanical and Aerospace Engineering from Seoul National University in 2009. After completing his doctoral studies, he conducted postdoctoral research at the University of California, Berkeley, under the mentorship of Prof. Peidong Yang. Following three years of experience at UC Berkeley, he began his independent academic career in 2012 as an Assistant Professor in the Department of Mechanical Engineering at Ulsan National Institute of Science and Technology (UNIST) in South Korea. He is now a Full Professor in the same department at UNIST.

Prof. Jeong has an impressive academic and research portfolio, with over 150 publications in international journals. He holds more than 100 registered patents and has received over 40 prestigious academic awards in the fields of micro/nano engineering. His current research interests include bioinspired soft materials and adhesives, soft wearable devices, and robotics.

Prof. Renyun Zhang

Renyun Zhang is an associate professor and senior lecturer in nanotechnology at Mid Sweden University. He received his Ph.D. in Biomedical Engineering at Southeast University, in 2007. Dr. Zhang's research interests include energy harvesting using triboelectric nanogenerators, self-powered sensors. Dr. Zhang has published more than 100 peer-reviewed papers and chapters in Advanced Materials, Advanced Energy Materials, Nano Energy, EcoMat, etc. He is the chairman of the 6th International Conference on Nanogenerators and Piezoelectronics (NGPT2022), and the main symposium chair at the spring meeting of the European Materials Research Society (EMRS2024). He is a guest editor of Nano Energy in 2022 and Materials Bulletin in 2024.

Prof. Jin Yang

Dr. Jin Yang received the B.E., M.E. and Ph.D. degrees in instrumentation science and technology from Chongqing University in 2002, 2004, and 2007, respectively. Currently, he is a professor with the College of Optoelectronic Engineering, Chongqing University. His current research interests focus on sensor and actuator, measurement and instrumentation, nanogenerator, self-powered sensor and systems. Focusing on low-frequency force sensing technology, we have realized the accurate detection of physiological signals such as non-invasive pulse wave and respiration. Received several provincial and ministerial level awards.

CONFERENCE PROGRAM

Saturday, September 14, 2024

Symposium 1: Modern Tribology: The Past, Present and Future		1F Conference Room	
10:00-10:05	Opening Remarks	Tianmin Shao	
10:05-11:00	Plenary Lecture	Nicolas Spencer The Lubricity of Open-Structured Polymers	Chair Tianmin Shao
11:00-11:55	Plenary Lecture	Jacob Klein Nature’s Solutions in Biotribology	
11:55-13:30	Lunch Break		
13:30-14:15	Keynote Lecture	Shirong Ge Smart Tribology	Chair Yu Tian
14:15-15:00	Keynote Lecture	Irina Goryacheva Contact Mechanics as The Basis of The Fundamental Tribology Development	
15:00-15:10	Coffee Break		
15:10-15:55	Keynote Lecture	Hideki Kawakatsu Tayloring Good Atomic Force Microscopy Tips with Better Probability	Chair Yonggang Meng
15:55-16:40	Keynote Lecture	Hongbo Zeng Tuning Reversible Molecular Interactions for the Development of Wet Adhesives, Self-healing Materials, and Lubricating Surfaces	
16:40-16:50	Closing Remarks	Yonggang Meng	
18:00-20:00	Welcome Reception		

Sunday, September 15, 2024

Plenary Room

3F Convention Hall

September 15, 2024

08:30-09:00	OPENING CEREMONY		Chair Weimin Liu
Plenary Talk on Tribology in Asia			
09:00-09:25	Tribology in Australia - Past, Present and the Future	Pawel Podsiadlo Curtin University	Chair Shirong Ge
09:25-09:50	Tribology in China	Zhongrong Zhou Southwest Jiaotong University	
09:50-10:10	Coffee Break		
10:10-10:35	Industrial and Academic Tribology Research in India - Current Status	Sujeet K Sinha Indian Institute of Technology Delhi	Chair Xinping Yan
10:35-11:00	Advances of Tribology in Japan	Noritsugu Umehara Nagoya University	
11:00-11:25	K-Tribology: Now and Beyond	Dae Eun Kim Yonsei University	
11:25-11:50	Unlocking the Potential of Agricultural Waste as Sustainable Tribo-Materials in Malaysia	Mohd Fadzli Bin Abdollah Universiti Teknikal Malaysia Melaka	

Sept.15

40

ASIATRIB & CICT2024

Track 1 - I Friction and Lubrication

September 15, 2024

3F Function Hall 1

13:30-14:00	KEYNOTE Film Thickness and Friction of Rough Surfaces in Mixed Lubrication Regime Petr Sperka, Ivan Krupka, Martin Hartl Brno University of Technology, Czechia	Chair Jing Wang
14:00-14:20	The Experimental Study on Oil Film Behaviors Under Quantitative Oil Supply Conditions Lingtong Sun, Wenzhong Wang Beijing Institute of Technology, China	
14:20-14:40	Investigation of A Method for Measuring Oil Film Thickness at the Ehl Contact Area Utilizing Three-Wavelength Optical Interferometry in A High-Load, High-Peripheral-Speed Traction Visualization Experimental Apparatus Shunki Boku, Masayuki Ochiai, Azetsu Akihiko, Shunichi Tajima Tokai university, Japan	
14:40-15:00	Effects of 2D Inhomogeneous Material on Tribological Contact Characteristics in Thermal Elastohydrodynamic Lubrication Huanian Liu ¹ , Chaoqun Li ¹ , Jing Wang ¹ , Cornelis H. Venner ² 1. Donghua University, China; 2. University of Twente, Netherlands	
15:00-16:20	Coffee Break & Poster Session	
16:20-16:50	KEYNOTE Plain Bearings for Wind Turbines Georg Jacobs, Timm Jakobs, Thomas Decker, Mattheüs Lucassen, Julian Röder, Lehmann Benjamin RWTH Aachen, Germany	Chair Petr Sperka
16:50-17:15	INVITED Establishment of a Numerical Algorithm for Starved Thermal EHL in Zero Entrainment Condition Jing Wang ¹ , Venner Kees ² 1. Donghua University, China; 2. University of Twente, Netherlands	
17:15-17:35	Elastohydrodynamic Lubrication Mechanisms of Aqueous Polyethylene Glycols Considering Different Chain Lengths and Water Contents Stefan Hofmann, Jingyu Hou, Thomas Lohner, Karsten Stah ¹ Technical University of Munich, Germany	
17:35-17:55	Thermal Mixed Elastohydrodynamic Lubrication Modeling and Analysis of The Lubricated Non-Conformal Contacts with Non-Gaussian Surface Roughness and Coating Chunxing Gu University of Shanghai for Science and Technology, China	
17:55-18:15	Numerical Lubrication Performance Evaluation of Quasi-Random Nanostructures Surfaces Hongwei Zhang ¹ , Chengjiao Yu ¹ , Shuangcheng Yu ² 1. Hebei University of Technology, China; 2. Xingyi Metal Group, China	

Sept.15

41

ASIATRIB & CICT2024

Track 1 – II Friction and Lubrication

September 15, 2024

3F Function Hall 2

13:30-14:00	KEYNOTE Cross-Scale Superlubricity Karsten Stahl, Stefan Hofmann, Thomas Lohner TUM School of Engineering, Germany	Chair Janet Wong
14:00-14:20	Oil-based Nanophosphate Additives: Interface Adsorption and Interlayer Lubrication Dan Jia, Linlin Duan, Haitao Duan, Jian Li Wuhan Research Institute of Materials Protection, China	
14:20-14:40	Self-Dispersing MoS2 QDs/Graphene Crumpled Balls as Effective High-Temperature Lubricant Additives Guiru Du, Yujuan Zhang, Guangbin Yang, Ningning Song, Shengmao Zhang Henan University, China	
14:40-15:00	Reproducible Molecular Simulations of Sliding on SDS Surfactant Films with Dtool and Dserver, A Flexible Ecosystem for Distributed Data Management Johannes Laurin Hörmann ¹ , Chenxu Liu ² , Ashwin Vazhappilly ¹ , Tjelvar S. G. Olsson ³ , Yonggang Meng ² , Lars Pastewka ¹ 1. University of Freiburg, Germany; 2. Tsinghua University, China; 3. John Innes Centre, UK	
15:00-15:20	Effects of Conformations of Adsorbed Films of Polymer Additives on The Formation of Lubricating Films during Sliding Yuxi Song, Kenji Fukuzawa, Shintaro Itoh, Hedong Zhang, Naoki Azuma Nagoya University, Japan	
15:20-16:20	Coffee Break & Poster Session	
16:20-16:45	INVITED In-situ Investigation of Lubricant Behaviour Janet Wong Imperial College London, UK	Chair Hedong Zhang
16:45-17:05	ZDDP and MoDTC Interactions and Their Effect on Tribofilm Growth Revealed by In-situ Atomic Force Microscopy Shaoli Jiang, Motoyuki Murashima, Koshi Adachi Tohoku University, Japan	
17:05-17:25	Performance and Mechanism Studies of Novel Polymers as Additives for Environmentally Friendly Lubricant Xuechao Song ^{1,2,3} , Zhaoyang Guo ^{2,3} , Haiyang Gu ¹ , Wenjing Hu ^{2,3} , Naoki Yamashita ¹ , Tomoko Hirayama ¹ , Jiusheng Li ^{2,3} 1. Kyoto University, Japan; 2. University of Chinese Academy of Sciences, China; 3. Shanghai Advanced Research Institute, Chinese Academy of Sciences, China	
17:25-17:45	Electro-Responsiveness of Phosphorus-Containing Ashless Lubricant Additives Yun Zhao, Jie Zhang, Hugh Spikes, Janet Wong Imperial College London, UK	
17:45-18:05	Enhanced Lubrication Performance of PFPE with TMFS-Modified MoS2 under High-Temperature Conditions Yunze Li Tsinghua University, China	
18:05-18:25	Relationship between Solubility of Additives in Base Oils and Friction Properties Haiyang Gu ¹ , Tomoko Hirayama ¹ , Naoki Yamashita ¹ , Yuting Guo ¹ , Jimin Xu ² 1. Kyoto University, Japan; 2. Hefei University of Technology, China	

Track 1 - III Friction and Lubrication

September 15, 2024		3F Reception Hall
13:30-14:00	KEYNOTE Multiscale Contact Mechanics Theory with Application to Adhesion Bo Persson Research Center Juelich, German	Chair Irina G. Goryacheva
14:00-14:20	Influence of Probabilistic Roughness Parameters on the Contact Characteristics Anastasiya Yakovenko Russian Academy of Sciences, Russia	
14:20-14:40	High-Speed Friction Behavior of Aircraft Tire Based on Thermo-Mechanical Coupling Method Jian Wu ¹ , Fei Teng ¹ , Benlong Su ¹ , Youshan Wang ² 1. Harbin institute of technology (Weihai), China; 2. Harbin institute of technology, China	
14:40-15:00	Study on the Frictional Interface Interaction Based on Molecular Dynamics Simulation Gai Zhao Nanjing University of Aeronautics and Astronautics, China	
15:00-15:20	Study on the Friction Control Performance of Top-of-Rail Friction Modifiers Under Different Application Conditions Bingnan Wu ¹ , Wenjian Wang ¹ , Haohao Ding ¹ , Shuyue Zhang ¹ , Jun Guo ¹ , Qiang Lin ¹ , Qiyue Liu ¹ , Roger Lewis ² 1. Southwest Jiaotong University, China; 2. The University of Sheffield, UK	
15:20-16:20	Coffee Break & Poster Session	
16:20-16:45	INVITED The Wheel-Rail Interface: Experimental Insights into an Open Tribological System Milan Omasta, Radovan Galas, Simon Skurka, Martin Hart ¹ , Ivan Krupka Brno University of Technology, Czechia	Chair Wenjian Wang
16:45-17:05	Why Frictional Behavior is Difficult to Repeat? Yulong Li ¹ , Christian Greiner ^{1,2} 1. Karlsruhe Institute of Technology, Germany; 2. KIT IAM-ZM MicroTribology Center (µTC), Germany	
17:05-17:25	Experimental Study on Friction Resistance of Earthworm Bionic Robot in Pipe Ningmeng Chen Huaqiao University, China	
17:25-17:45	Electro-Mechanical Contact Behavior of Rough Surfaces in Extreme Temperatures Kai Wang, Wurui Ta, Youhe Zhou Lanzhou University, China	
17:45-18:05	The Effect of Water Contamination on Friction Modification in the Wheel-Rail Contact Simon Skurka, Radovan Galas, Milan Omasta, Ivan Krupka, Martin Hart ¹ Brno University of Technology, Czechia	

Track 2 Wear and Fatigue

September 15, 2024

4F Function Hall 3

Sept.15

44

ASIATRIB & CICT2024

13:30-14:00	KEYNOTE: Revisiting Description of Surface Roughness of Worn Surfaces - By Human and By Machine Joichi Sugimura Kyushu University, Japan	Chair Yongzhen Zhang
14:00-14:20	Understanding the Shear Localization and Shear Instability in Ultralow-Wear Polymers Crossing the Wide Pressure-Velocity Conditions Wei Sun, Jiaxin Ye, Kun Liu, Xiaojun Liu Hefei University of Technology, China	
14:20-14:40	Critical Conditions of Wear Based on Accurate Elastic Energy Calculations Chenglong Xia Xi'an Jiaotong University, China	
14:40-15:00	Study on Performance Regulation and Friction Effect of NiCr/NiSi Thin Film Thermocouple Zhihui Liu, Wang Shipeng, Hu Lai, Wang Zixi Tsinghua University, China	
15:00-15:20	Failure Mechanism Analysis and Performance Optimization Research of Mining Roller Drill Bit Bearings Yang Wang, Guorong Wang, Lin Zhong, Gang Wei, Xiaolong Wu Southwest Petroleum University, China	
15:20-16:20	Coffee Break & Poster Session	
16:20-16:45	INVITED: The Tribological Behavior and Damage Mechanism of Bearing Materials under Unsteady Conditions Tiantian He, Yongzhen Zhang Henan University of Science and Technology, China	Chair Joichi Sugimura
16:45-17:05	A Cross-Scale Study of the Mechanism of Wear Effects of Anisotropy in Nickel-based Single Crystal Superalloys Xiaohui Tuo, Yangqin Liu, Xin Wei, Wei Shi, Xiang Chen, Lei Chen, Linmao Qian Southwest Jiaotong University, China	
17:05-17:25	Attempts to Enhance Hard/soft Seal Defence Against Particles Invasion: Model Construction and In-situ Observation Ziyi Zhou, Qin Zhou, Tangshengjie Wei, Yunfei Di, Nan Wang, Longxiang Yu China University of Geoscience (Beijing), China	
17:25-17:45	Online Measurement of Wear Depth Based on Displacement Signal of Vertical Tester Hongju Li, Ying Liu, Haoran Liao Tsinghua University, China	
17:45-18:05	Cross-Scale Fretting Wear Characteristics of Metal Rubber under Thermal Mechanical Coupling Zhiying Ren, Qinwei Wang, Hongyin Li, Zihao Huang, Hongbai Bai Fuzhou University, China	
18:05-18:25	Revealing the Shear Band Origin of White Etching Area in Rolling Contact Fatigue of Bearing Steel Shuxin Li, Ganghui Jiang, Xinqi Han Ningbo University, China	

Track 3 - I Coatings and Surfaces Engineering

September 15, 2024		4F Function Hall 5
13:30-14:00	KEYNOTE Precise Control of Particle Transport, Deposition and Removal in Current and Additive Semiconductor Manufacturing Ahmed Busnaina Northeastern University, the United States	Chair Ding Weng
14:00-14:20	Multi-scale Debonding Behaviors of Precision Glass Molding Interface Jian Zhou Hefei University of Technology, China	
14:20-14:40	Enhancing Current-Carrying Prediction with Spatial Frequency Analysis Nian Yin, Zishuai Wu, Ke He, Zhen Li, Songkai Liu, Zhinan Zhang Shanghai Jiao Tong University, China	
14:40-15:00	Characterization of Three-Dimensional Roughness of Aviation Bearing Surface and Evaluation of Its Influence on Lubrication Performance Mingze Yan, Le Gu Harbin Institute of Technology, China	
15:00-15:20	Nanoscale Coating Wear Measurement Approach Based on Raman signal Nan Xu, Ardian Morina University of Leeds, UK	
15:20-16:20	Coffee Break & Poster Session	
16:20-16:45	INVITED Biomimetic Surface Microstructure for Air Drag Reduction Applications Ding Weng Tsinghua university, China	Chair Ahmed Busnaina
16:45-17:05	Surface-Interface Characteristics and Tribological Performances of In-situ Grown CrN and CrAlN Coatings by Cathodic Arc Ion Plating Yuling Lu, Yuxing Peng China University of Mining and Technology, China	
17:05-17:25	Synergistically Enhancing Wear-Resisting Property by Infiltrating Silicon Nitride Fibers with TPU/PEG Through Sizing Technology Da An, Ning Wu Tiangong University, China	
17:25-17:45	The Effect of Duty Cycle and Nitrogen Flow Rate on The Mechanical Properties of (V,Mo)N Coatings Deposited by High-Power Pulsed Magnetron Sputtering Yiqun Feng ¹ , Tsai-Fu Chung ² , Chien-Nan Hsiao ³ , Jia-Hong Huang ⁴ , Aiyong Wang ¹ 1. Ningbo Institute of Materials Technology and Engineering, China; 2. National Yang Ming Chiao Tung University, China; 3. Taiwan Instrument Research Institute, China; 4. National Tsing Hua University, China	
17:45-18:05	Comparison of Tool Life and Wear Resistance of Four Designed Coatings Jiedong Deng, Feng Jiang Huaqiao University, China	

Track 4 Tribo-chemistry and Lubricants

September 15, 2024

2F Meeting Room 16

Sept.15

46

ASIATRIB & CICT2024

13:30-14:00	KEYNOTE: Polymer Micelles, Worms, and Hollow Spheres under Confinement and Shear: Surface Forces, Friction, and Nanomechanics Wuge Briscoe, Julia Bartenstein University of Bristol, UK	Chair Feng Zhou
14:00-14:20	Effect of Electric Fields on the Decomposition of Nanoconfined Lubricant Additives Zhaoran Zhu, James P. Ewen, Daniele Dini Imperial College London, UK	
14:20-14:40	In-situ AFM Observation of ZDDP-Derived Tribo-Film Formation Process in Nitrogen Environment Chinari Shimura ¹ , Kaisei Sato ² , Shinya Sasaki ² 1. Graduate school of Tokyo University of Science, Japan; 2. Tokyo University of Science, Japan	
14:40-15:00	Potassium Borate/graphene Nanocomposite Lubricant Additive with Anti-friction/wear and Anti-corrosion Functions for Marine Diesel Engine Burning Low Sulfur Fuel Xianbin Hou ¹ , Huahao Tang ¹ , Leyang Dai ² , Xianglin Li ¹ , Guanglin Lan ¹ , Zhiqiang Ai ¹ , Yanhua Jiang ¹ , Chenxing Sheng ³ , Hong Wan ¹ 1. Beibu Gulf University, China; 2. Jimei University, China; 3. Wuhan University of Technology, China	
15:00-15:20	Formation and Tribological Properties Analysis of Tribofilm on Piston Ring and Cylinder Liner Chang Ge, Xuan Ma, Xiqun Lu, Zhigang Liu Harbin Engineering University, China	
15:20-16:20	Coffee Break & Poster Session	
16:20-16:45	INVITED: Lubrication Response of Ionic Liquid Water-Based System Induced by Multiple Interactions and Their Interfacial Tribochemical Behavior Rui Dong, Fan Xu, Bingyu Tian, Mingjin Fan Baoji University of Arts and Sciences, China	Chair Yu Tian
16:45-17:05	Key of The Interfacial Bonding Reaction on Friction Surfaces: A Theoretical Answer to What the Activation Volume Is and How to Compute Yang Wang Southwest Jiaotong University, China	
17:05-17:25	Coupling Molecular Dynamics and Fluid Dynamics for Multiscale Fluid in Tribology Hitoshi Washizu, Ryuichi Okamoto, Kosar Khajeh University of Hyogo, Japan	
17:25-17:45	Dispersion Stability and Tribological Behavior of Nanocomposite Supramolecular Gel Lubricants and Molecular Dynamic Simulation Yanyan Bai Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China	
17:45-18:05	Effect of Compressive Stress on Tribofilm Formation of Zinc Dialkyl Dithiophosphates Chuan-Chieh Wang, Jie Zhang, Hugh Spikes, Janet Wong Imperial College London, UK	
18:05-18:25	Using Molecular Simulations to Predict the Tribology Behavior of Lubricant Additives and Guide the Formulation Design of Lubricant for Titanium Alloy Cutting Fluid Yanan Meng, Yuanjing Dai, Chenhui Zhang Tsinghua University, China	

Track 5 Biotribology and Biomimetics

September 15, 2024

2F Meeting Room 15

13:30-14:00	KEYNOTE: Bio-Inspired Lubrication with Synovial Fluid Constituents and Hydrated Polymer Hydrogels Yoshinori Sawae, Hironori Shinmori, Seido Yarimitsu, Wenxiao Li, Takumi Sato Kyushu University, Japan	Chair Roger Lewis
14:00-14:20	Wall Shear Gradient Dependent Thrombosis and Thrombolysis Studied in Blood-On-A-Chip with Stenotic, Branched, and Valvular Constructions Yan Li, Haosheng Chen Tsinghua University, China	
14:20-14:40	Delaying Total Knee Replacement: New Implants for Young Osteoarthritis Patients Maziar Ramezani Auckland University of Technology, New Zealand	
14:40-15:00	Improved Hydration Lubrication of Uhmwpe by Polyelectrolyte-Embedded Modification for Long-Lasting Artificial Joints Hongjiang He, Jianing Xu Tsinghua University, China	
15:00-15:20	Friction of Articular Cartilage Surface Lubricated with Synovial Fluid Constituents in Contact with Glass and Hydrogel Wenxiao Li, Seido Yarimitsu, Takehiro Morita, Sawae Yoshinori Kyushu university, Japan	
15:20-16:20	Coffee Break & Poster Session	
16:20-16:45	INVITED: Improving Wheel/rail Contact Tribology: Case Studies in Going from the Lab to the Field Roger Lewis, Kazim Yildirimli, David Fletcher, Kate Tomlinson, Zing Lee, Ben White, Ruby Kempka, Will Skipper University of Sheffield, UK	Chair Yoshinori Sawae
16:45-17:05	Dynamic Mechanical Simulation Analysis of Human Femoral Bone Grafting Ning Li Zhejiang Normal University, China	
17:05-17:25	Construction and Application of The Dynamic Swallowing Model Based on Medical Image Data Shanhua Qian, Yujing Jiang Jiangnan University, China	
17:25-17:45	Novel Biomimetic Synthetic Injectable Macromolecular Materials for Efficient Lubrication Treatment of Osteoarthritis Xiaoduo Zhao, Shuanhong Ma Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China	
17:45-18:05	Design, Preparation and Application of Near-Infrared Responsive Gecko-Inspired Bionic Surface Xiaoxiao Dong ¹ , Xiaohang Luo ² 1. Liaoning Petrochemical University, China; 2. Wuhan University, China	

Sept.15

47

ASIATRIB & CICT2024

Track 6 Nanotribology and Superlubricity

September 15, 2024

2F Meeting Room 17

13:30-14:00	KEYNOTE Cell-Inspired, Electromodulation of Friction Jacob Klein Weizmann Institute, Israel	Chair Chenhui Zhang
14:00-14:30	KEYNOTE Hydrogen Induces Ultra-Low Friction in Friction Systems Using Carbon-Based Coatings Koshi Adachi Tohoku University, Japan	
14:30-14:50	Superlubricity of Hydrated Ions Tianyi Han ¹ , Chenhui Zhang ¹ , Ming Ma ¹ , Xavier Banquy ² , Jianbin Luo ¹ 1. Tsinghua University, China; 2. University of Montreal, Canada	
14:50-15:10	New Superlubricity Systems of Highly Concentrated Solutions and Ionic Liquid Analogues Hongyu Liang, Manqiang Liu, Yongfeng Bu Jiangsu University, China	
15:10-15:30	Probing Microstructure and Nanofriction of Confined Ionic Liquids Using Colloid Probe AFM An Rong Nanjing University of Science and Technology, China	
15:30-16:20	Coffee Break & Poster Session	
16:20-16:50	KEYNOTE Design of Macroscale Solid Superlubrication Towards Engineering Li Ji Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China	Chair Koshi Adachi
16:50-17:15	INVITED Unveiling the Layered Structure of Sulfobetaine Polymer Brushes through Bimodal Atomic Force Microscopy Jing Yu Nanyang Technological University, Singapore	
17:15-17:35	Disparate External Electric Field Effect on The Adsorption and Shear Behavior of Monovalent and Trivalent Ions in Electrolyte Solution Ruiqi Zhao, Tianyi Han, Chenhui Zhang Tsinghua University, China	
17:35-17:55	Effect of Surface Oxidation on the Adsorption and Friction Properties of Oiliness Additives Evaluated by Atomic Force Microscopy Lin Sun ¹ , Naoki Yamashita ¹ , Tomoko Hirayama ¹ , Kento Mimura ² , Yoshihiro Ito ² , Hironobu Nakanishi ² 1. Kyoto University, Japan; 2. Kobe Steel, Ltd, Japan	
17:55-18:15	The Ultra-Low Friction Achieved via Proton-Type Ionic Liquid with Inorganic Salts at Steel/Steel Interfaces Xia Zhang Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China	

Symposium 2 Triboelectric Nanogenerators for Energy and Sensors

Time (September 15)		Speaker	Title	Chair
13:30-13:35	Opening Remark			Haixia Zhang
13:35-14:20	Plenary Lecture	Zhonglin Wang	Triboelectric Nanogenerators for Sustainable Energy and Systems	
14:20-14:50	Keynote Lecture	Hoon Eui Jeong	Skin-Mountable Flexible Patch with Programmable Adhesion for Wearables and Energy Harvesting	
14:50-15:15	Invited Talk	Daoai Wang	Design and Utilization of Solid-Liquid Triboelectric Nanogenerators	
15:15-15:30	Coffee Break & Poster Session			
15:30-16:00	Keynote Lecture	Renyun Zhang	Explore and Utilize the Human Body's Triboelectrification for Energy Harvesting and Sensing	Hoon Eui Jeong
16:00-16:25	Invited Talk	Ziming Wang	Contact-electro-catalysis (CEC)	
16:25-16:45	Oral Talk	Hengyu Li	Micro-nano Electromechanical System Based on Piezoelectric Microfluidics and Triboelectric Self-Sensing	
16:45-16:50	Break			
16:50-17:20	Keynote Lecture	Haixia Zhang	Self-Powered Smart System based on Triboeelertric Nanogenerator	Renyun Zhang
17:20-17:45	Invited Talk	Yuan Ma	Developing Advanced Human-Machine Tribology Interfaces	
17:45-18:05	Oral Talk	Pengfei Wang	Super-low Friction Electrification Behavior and Mechanism of the PTFE Films under Liquid Lubrication	
18:05-18:25	Oral Talk	Yongming Yao	Self-powered Sensor System for UAVs based on Triboelectric Nanogenerator	

Track 8 Aerospace and Ocean Tribology

September 15, 2024

3F Meeting Room 30

Sept.15

50

ASIATRIB & CICT2024

13:30-14:00	KEYNOTE Tribology of Carbon-Based Coatings for Lightweight Components under Demanding Conditions: High Humidity, Temperature, and Electrical Current Ahmet T Alpas, Sukanta Bhowmick University of Windsor, Canada	Chair Chengqing Yuan
14:00-14:30	KEYNOTE Superlubrication Microcapsules Guoxin Xie, Yi Zhang, Hao Chen, Lin Zhang, Jianbin Luo Tsinghua University, China	
14:30-14:50	Evolution of Interfacial Nanostructures Governing Fretting Wear in a-C:H Films Yulei Yang Nanjing University of Science and Technology, China	
14:50-15:10	Improved Tribological Characteristics of Pure Graphite in Liquid Nitrogen Resulting from Cryogenic Mechanical Properties Jimin Xu, Cheng Zheng, Kun Liu Hefei University of Technology, China	
15:10-15:30	Molecular Dynamics Simulation and Characterization of Metal Migration and Friction Behavior at The Interface of Antimony-Graphite Immersed with C/Sb20% at High Temperature and High Pressure Junjie Lu NingboTech University, China	
15:25-16:20	Coffee Break & Poster Session	
16:20-16:50	KEYNOTE Study on The Preparation and Lubricated Performance of Bionic Lignum Vitae Composite Materials for Water-Lubricated Bearing Chengqing Yuan, Zumin Wu, Zhiwei Guo Wuhan University of Technology, China	Chair Ahmet T. Alpas
16:50-17:10	Study on Dynamics of Cavitation Collapse and Cavitation Erosion Mechanism Shengpeng Zhan Wuhan Research Institute of Materials Protection, China	
17:10-17:30	Effect of Particle Type and Size in Water on The Performance of Surface Texturing in Friction and Wear Reduction Shuai Yan, Hongbo Zou, Bin Lin Tianjin University, China	
17:30-17:50	Experimental and Numerical Study on Oil Leakage Flow Characteristics of Carbon Seal in Bearing Chamber Liangyu Han ^{1,2} , Huan Zhao ^{1,2} , Dan Sun ^{1,2} , Shuaifang Wen ^{1,2} , Boran Yu ^{1,2} , Guozhe Ren ^{1,2} 1. Shenyang Aerospace University, China; 2. Key Laboratory of Turbomachinery Advanced Seal Technology, China	
17:50-18:10	New Findings regarding High-Temperature Materials Patrick Beau ^{1,2} , Nora Kind ³ , Stefan Reh ³ 1. Optimol Instruments Prüftechnik GmbH, Germany; 2. Optimol Instruments Prüftechnik GmbH, Germany; 3. Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany	
18:10-18:30	A Novel Tribometer for Aircraft Engine Nozzle Actuation System under Heavy Load and High Temperature Songkai Liu, Zhixuan He, Kaiyi Huang, Zhinan Zhang Shanghai Jiao Tong University, China	

Track 9 Industrial Tribology and Instruments

September 15, 2024		2F Meeting Room 13
13:30-14:00	KEYNOTE Innovation Management for Tribological Solutions Kenichi Shibasaki NSK Ltd., Japan	Chair Ian Sherrington
14:00-14:20	Wear Debris Image Segmentation Algorithm Based on Wavelet Modulation and Morphological Contour Analysis for Gear Wear Online Monitoring Bo Li, Ahad Abdul, Wei Wu Xi'an Shiyou University, China	
14:20-14:40	Effect of Grid-Like Array Wettability Surface on Bearing Lubrication Performance under Limited Lubricant Supply Chenglong Liu ¹ , Shijin Wang ¹ , Xinming Li ¹ , Xinglin Li ³ , Feng Guo ¹ , Patrick Wong ^{1,2} 1. Qingdao University of Technology, China; 2. City University of Hong Kong, China; 3. Hangzhou Bearing Test and Research Center Co., Ltd, China	
14:40-15:00	Airborne Particles Emitted from Vehicle Disc Brakes Long Wei China University of Petroleum, China	
15:00-16:20	Coffee Break & Poster Session	
16:20-16:50	KEYNOTE Tribotronic Components: A Revolution Transforming Machine Elements into Cyber-Physical Systems Ian Sherrington ¹ , Sergei Glavatskih ² 1. University of Central Lancashire, Britain; 2. KTH, Royal institute of Technology, Stockholm, Sweden	Chair Kenichi Shibasaki
16:50-17:10	Research on The Tool Adhesive Wear Behavior During High-Speed Milling of Aluminum Alloy Xinxin Meng ¹ , Youxi Lin ² 1. Fujian Jiangxia University, China; 2. Fuzhou University, China	
17:10-17:30	Effect of Coulomb Friction of the Auxiliary Sealing Ring on Dynamic Characteristics of Gas Face Seals Liming Teng, Jinbo Jiang, Xudong Peng, Jiyun Li Zhejiang University of Technology, China	
17:30-17:50	The Influence of Cooling Condition on The Heat Transfer of High-Speed Mechanical Seal with Textured Side-Wall Minfeng Yu, Xudong Peng, Xiangkai Meng Zhejiang University of Technology, China	
17:50-18:10	The Features of the Tire Wear Particles and Its Prevention from Polluting Environment Haibo Huang, Ruilin Wang, Junhao Qu, Jiachang Liu Ningbo University, China	

Monday, September 16, 2024

Plenary Room

3F Convention Hall

September 16, 2024

08:30-09:10	Tribological Study on Wafer Thinning for Advanced IC Packaging	Xinchun Lu Tsinghua University	Chair Yonggang Meng
09:10-09:50	Contact Mechanics and Friction: Role of Adhesion	Valentin Popov TU Berlin	Co-Chair Junyan Zhang

Track 1 - I Friction and Lubrication

September 16, 2024

3F Function Hall 1

10:10-10:40	KEYNOTE Towards the Prediction of Lubricated Contacts by Machine Learning Max Marian Leibniz University Hannover, Germany	Chair Tianbao Ma
10:40-11:05	INVITED In-Situ SEM Observation of POM Friction Interfaces and Friction Force Estimation by Convolutional Neural Network Hiroshi Kinoshita ¹ , Yoshiyuki Sugai ^{1,2} , Serina Tanaka ¹ , Naohiro Matsumoto ¹ 1. University of Hyogo, Japan; 2. Daicel Corporation, Japan	
11:05-11:25	Tribo-Informatics: Tribology Research with Enabling Technologies in the AI Era Zhinan Zhan, Nian Yin, Xin Wang Shanghai Jiao Tong University, China	
11:25-11:45	Fast Prediction of Simulated One-Dimensional Model Functions Based on Machine Learning and DFT Theory Song Yuan Tsinghua University, China	
11:45-12:05	A Study on the Evaluation of Prediction Performance of Friction Coefficient from Speckle Patterns Using Machine Learning Wataru Matsuda ¹ , Kaisei Sato ² , Shinya Sasaki ² 1. Graduate School of Tokyo University of Science, Japan; 2. Tokyo University of Science, Japan	
12:05-13:30	Lunch Break	
13:30-14:00	KEYNOTE Research on Lubrication of High Speed Bearing Wenzhong Wang Beijing Institute of Technology, China	Chair Xinming Li

14:00-14:20	Influence of Lubrication Characteristics in High-Speed Rotating Bearings Yoji Sunagawa Idemitsu Kosan Co.,Ltd., Japan	Chair Xinming Li
14:20-14:40	The Influence of Roughness on the Peeling of Rolling Bearings Xi Zhou NSK (China) Research and Development Co.,Ltd, China	
14:40-15:00	Fundamental Experiments on Electrical Corrosion in Oil Lubricated Radial Ball Bearings Yifan Wu ¹ , Shunsuke Nakamizo ¹ , Ryota Ishii ¹ , Reo Miwa ¹ , Toru Izumi ² , Kazumi Sakai ² , Norifumi Miyanaga ¹ 1. Kanto Gakuin University, Japan; 2. Eneos Corporation, Japan	
15:00-15:20	Thermodynamic Characterization and Experimental Study of Double-Row Angular Contact Automotive Wheel Hub Bearings Yanfang Dong, Kai He, Ming Qiu, Wei Yu, Zibo Yan Henan University of Science and Technology, China	
15:20-16:20	Coffee Break & Poster Session	
16:20-16:45	INVITED Ball Bearing Cage Structure on Lubricant Distribution, Lubrication and Friction Xinming Li Qingdao University of Technology, China	Chair Wenzhong Wang
16:45-17:05	Quantitative Study of The Flow Patterns and Transport Mechanism of Lubricant Oil in A Ball Bearing Hongbai Chen, Wenzhong Wang, He Liang Beijing Institute of Technology, China	
17:05-17:25	Experimental Investigation of the Oil Supply Layer in A Model Rolling Bearing He Liang, Wenzhong Wang, Zhihan Fan, Chuang Li, Yan Lu Beijing Institute of Technology, China	
17:25-17:45	Predictions of Friction and Wear in Ball Bearings Based on A 3D Point Contact Mixed EHL Model Yan Feng, Xiujiang Shi, Xiqun Lu, Yunfei Fei Harbin Engineering University, China	
17:45-18:05	Investigation on the Skidding Characteristics and Cage Motion Stability of High-Speed Cylindrical Roller Bearing Jiaming Zhang ¹ , Ming Qiu ^{1,2} 1. Henan University of Science and Technology, China; 2. Collaborative Innovation Center of Machinery Equipment Advanced Manufacturing of Henan Province, China	

Track 1 - II Friction and Lubrication

September 16, 2024

3F Function Hall 2

10:10-10:40	KEYNOTE Study on Elastohydrodynamic Lubrication with Electric Field Using Optical Interference Method Feng Guo, Ziyang Li, Zhaogang Jing Qingdao University of Technolgy, China	Chair Janet Wong
10:40-11:05	INVITED Development and Characterization of TEMPO-based High-Performance Organic Friction Modifiers Hedong Zhang, Masaki Tsukamoto, Jinchi Hou, Xingyu Chen, Seanghai Hor Nagoya University, Japan	
11:05-11:25	Gaseous Lubrication of Steel/Steel Rubbing Contacts Jie Zhang, Janet Wong, Hugh Spikes Imperial College London, UK	
11:25-11:45	Fabrication of Flexible and Transparent Metal Mesh Electrodes Using Surface Energy-Directed Assembly Process for Touch Screen Panels and Heaters Siqing Yuan, Zhimin Chai Tsinghua University, China	
11:45-12:05	Interfacial Friction Behavior of The Energetic HMX Crystal Ying Yin, Guocheng Li Institute of the Chemical Materials, China	
12:05-13:30	Lunch Break	
13:30-14:00	KEYNOTE Carbon-based Solid Lubricants: An Overview Jose Daniel Biasoli de Mello Universidade Federal de Uberlândia, Brazil	Chair Linqing Bai
14:00-14:20	Experimental Insights into Film Thickness and Friction of Textured Surfaces in Hydrodynamic Wedge and Parallel Gaps Petr Sperka, Milan Omasta, Ivan Krupka, Martin Hartl Brno University of Technology, Czechia	
14:20-14:40	The Unified Solution for Optimising Tribosystems Suhaib Ardah ¹ , Daniele Dini ¹ , Francisco J. Profito ² 1. Imperial College London, UK; 2. Polytechnic School of the University of São Paulo, Brazil	
14:40-15:00	Study on Lubrication and Wear Reduction of Textured Drill Bearing Gang Wei, Guorong Wang, Lin Zhong Southwest Petroleum University, China	
15:00-15:20	Effect of Groove Parameters on Tribological Performances of Battery Grid Continuous Casting Mold Sheng Yang Chongqing University, China	

15:20-16:20	Coffee Break & Poster Session	
16:20-16:45	INVITED The Synergetic Effect of Surface Texturing and ZDDP Additive Subject to Starved Lubrication Condition Linqing Bai Qingdao University of Technology, China	Chair Wenli Deng
16:45-17:05	Temperature Measurement in Textured Sliding Contacts Using Infrared Thermography Milan Omasta Brno University of Technology, Czechia	
17:05-17:25	Study on the Synergistic Effect of Laser Shock Peening and Surface Texture on the Friction and Wear Behaviour of Piston Ring Cylinder Liner Pair Junming Chen Southwest Petroleum University, China	
17:25-17:45	Optimization of Surface Texture Distribution on the Thrust Bearing based on the Flat-Headed Chevron Yulong Li, Yongyong He Tsinghua University, China	
17:45-18:05	Friction and Wear Properties of Aluminum Alloy During Ultra-Low Temperature Forming Yiren Gao, Hongxia Li, Danyang Zhao, Minjie Wang, Xiaobo Fan Dalian University of Technology, China	

Track 1 - III Friction and Lubrication

September 16, 2024

3F Reception Hall

10:10-10:40	KEYNOTE Investigation of Frictional Resistance in Sliding Contact Between Undulating Surfaces and Third-Body Particles Qiang Li Technical University of Berlin, Germany	Chair Milan Omasta
10:40-11:05	INVITED Research on the Influence of Particle Crushing Behavior on Wheel-Rail Adhesion and Damage During Sanding Process Wenjian Wang, Shuyue Zhang, Zhongrong Zhou, Qiyue Liu Southwest Jiaotong University, China	
11:05-11:25	Optimization of the Influence of the Friction Effect on the End Face of the Material in the Hopkinson Pressure Rod Experiment Yingxu Lin Huaqiao University, China	
11:25-11:45	Calculation Method of Friction Coefficient Based on Computer Vision Image Recognition Dafei Huang, Wurui Ta, Youhe Zhou Lanzhou University, China	
11:45-12:05	Influence of Torque Control on the Dynamic Behavior of Wheel-Rail Adhesion Instability Under Traction Conditions Xinxin Song, Wenjian Wang, Haohao Ding, Shuyue Zhang, Qiang Lin, Jun Guo, Qiyue Liu Southwest Jiaotong University, China	
12:05-13:30	Lunch Break	
13:30-13:55	INVITED Nonlinear Dynamic Analysis of a Hydrodynamic Air Bearing with Spiral Groove Used in High-Speed Micro Compressor Tianming Ren, Feng Ming, Zhang Jianhua University of Science and Technology Beijing, China	Chair Xianghui Meng
13:55-14:15	Research on the Inherent Mechanism of Velocity Distribution Law of the High-Pressure Aerostatic Thrust Bearing Liangbin Guo, Yuli Li, Yuting Feng Wuhan University of Science and Technology, China	
14:15-14:35	Multi-Physics Coupling in Lubricated Piston-Liner Systems: Modeling and Analysis Shuo Liu Shanghai Jiao Tong University, China	
14:35-14:55	Friction Reduction and Improve Seizure Resistance of Engine Bearing by a-C:H:Si Coated Journal Takumi Iwata, Masaya Fukuda, Shusuke Hoshino, Masakuni Oikawa, Yuji Mihara, Makoto Kano Tokyo City University, Japan	

14:55-15:15	Study on the Influence of New and Old J55/D Rod Tube Mixed Mode on Wear Performance of Rod Pump Xuan Qiu Southwest Petroleum University, China	Chair Xianghui Meng
15:15-16:20	Coffee Break & Poster Session	
16:20-16:45	INVITED Numerical and Experimental Investigations on Tribological Characteristics of Sliding Bearings in the PTO System Rui Zhang, Xianghui Meng Shanghai Jiaotong University, China	Chair Chuanwei Zhang
16:45-17:05	Prediction of Lubricating Oil Flow Around Piston Rings in Automotive Engines Using Computational Fluid Dynamics Yifeng Mao ¹ , Yuki Kawamoto ² , Kento Sugawara ¹ , Yuji Mihara ¹ , Takumi Iwata ¹ , Masakuni Oikawa ¹ , Akihiko Azetsu ² , Masayuki Ochiai ² 1. Tokyo City University, Japan; 2. Tokai University, Japan	
17:05-17:25	Research on Dynamic Stiffness and Damping Characteristics of Lubricating Oil Film in Sliding Bearings Yuxin Zhang, Le Gu Harbin Institute of Technology, China	
17:25-17:45	Influences of Surface Material, Lubricant and Oil Contamination on the Low-Speed Tribological Performance of Slipper Pairs in Swashplate-Type Axial Piston Motors Shaogan Ye ¹ , Yintong Sun ¹ , Yi Zhu ² , Chunyu Fu ² , Kefei Miao ² , Shoujun Zhao ² , Huixiang Liu ² 1. Xiamen University, China; 2. Beijing Institute of Precision Mechatronics and Controls, China	
17:45-18:05	Numerical and Experimental Investigation of Entrained Liquid Film Thickness in the Surface Energy-Directed Assembly Process Guangji Wang, Zhimin Chai, Xinchun Lu Tsinghua University, China	

Track 2 Wear and Fatigue

September 16, 2024

4F Function Hall 3

10:10-10:40	KEYNOTE: Research on Failure Mechanism of Fastening Joint Based on Fretting Tribology Minhao Zhu Southwest Jiaotong University, China	Chair Helmi Attia
10:40-11:05	INVITED: Application of Hydraulic Bearing Technology in The Field of High-end Equipment Friction Reduction Jibin Liu Sinotest Equipment Co.,Ltd., China	
11:05-11:25	Achieving Low Wear in A Complex Concentrated Alloy CrFeNiNb with Multi-Phase Hierarchical Microstructure Dingshan Liang, Fuzeng Ren Southern University of Science and Technology, China	
11:25-11:45	Research on Fatigue Damage Evolution and Failure of G13Cr4Mo4Ni4V Bearing Steel under Heavy Load Rolling Contact Feihu Lin, Liqin Wang, Zhen Li, Jiqiang Wu, Kun Shu, Shuaishuai Wei Harbin Institute of Technology, China	
11:45-12:05	Artificial Neural Network Supported Characterization and Design of Polymer-based Tribocomposites Yuxiao Zhao ¹ , Leyu Lin ² , Alois. K. Schlarb ^{1,2} 1. Rheinland-Pfälzische Technische Universität, Germany; 2. Qingdao University of Science and Technology, China	
12:05-13:30	Lunch Break	
13:30-14:00	KEYNOTE: Testing and Prediction of Fretting Wear and Fatigue Damage for Risk Management and Asset Protection of Nuclear Power Systems Helmi Attia McGill University, Canada	Chair Minhao Zhu
14:00-14:25	INVITED: High-Performance Polymer-based Tribomaterials through A Combination of Smart Data Acquisition and Artificial Intelligence Yuxiao Zhao ¹ , Leyu Lin ¹ , Alois. K. Schlarb ^{1,2} 1. Rheinland-Pfälzische Technische Universität, Germany; 2. Qingdao University of Science and Technology, China	
14:25-14:45	Investigation of Impact-Sliding and Tangential Fretting Wear Behavior of Zr-4 Alloy under Random Vibration Xue Mi ¹ , Min-hao Zhu ² 1. Nuclear Power Institute of China, China; 2. Southwest Jiaotong University, China	
14:45-15:05	Research on Modification of Copper Matrix Composites by Composite Ceramic Powder Prepared by Ball Milling Jiaqi Wu Central South University, China	

15:05-15:25	Effect of Temperature on Fretting Wear and Corrosion of High-Silicon T91 in The Liquid Lead-bismuth Eutectic (LBE) Hui Chen, Guiyu Mei, Guangzhao Wang, Wei Tan, Guorui Zhu Tianjin University, China	Chair Minhao Zhu
15:25-16:20	Coffee Break & Poster Session	
16:20-16:40	The Investigation of Lubricant Viscosity on Rolling Contact Fatigue Wear Ryotaro Ohashi, Kaisei Sato, Shinya Sasaki Tokyo University of Science, Japan	Chair Tiantian He
16:40-17:00	Effect of Work-rate on Fretting Wear and Corrosion of 690 Alloy under High-Temperature and High-Pressure Conditions Wenjie Pei, Shengzan Zhang, Wei Tan, Guorui Zhu Tianjin University, China	
17:00-17:20	Understanding Structural Effects of Friction and Wear Mechanism of Carbon Fiber Reinforced Three-Dimensional Braided Composites Siqi Liu, Zhiwei Xu Tiangong University, China	
17:20-17:40	Study on Wear Mechanism, Microstructure and Mechanical Properties of CuCrZr Alloy Surface for High-speed Sliding Electrical Contacts Xing Wang, Pingping Yao, Tao Zhang, Honghai Zhang, Wei Fan, Li Kang, Zihao Yuan, Yongqiang Lin Central South University, China	
17:40-18:00	Friction and Wear Properties Analysis of The Spring-Energized Seal Made of Filler Modified PTFE Xinni Zhao, Shuangxi Li, Dengyu Liu Beijing University of Chemical Technology, China	
18:00-18:20	A Peridynamic Model for Rail Crack Initiation with Cavity Defect Xiaochuan Ma East China Jiaotong University, China	
18:20-18:40	Effect of Molybdenum Disilicide and Nano-graphene on Tribological Properties of Copper-based Composites Kunyang Fan, Yan Wang, Wenhuan Jiang, Qingquan Liu Chengdu University, China	

Track 3 - I Coatings and Surfaces Engineering

September 16, 2024

4F Function Hall 5

10:10-10:40	KEYNOTE: Fabrication of Electronics and Sensors using a Surface Energy-Directed Assembly Process Zhimin Chai, Xinchun Lu Tsinghua University, China	Chair Jie Cheng
10:40-11:05	INVITED: In-situ Modified MoS2 Lubricant Grown by Laser Irradiation for Enhanced Tribology Performance Ting Luo ¹ , Yifan Dong ¹ , Xinchun Chen ² 1. Qilu University of Technology, China; 2. Tsinghua University, China	
11:05-11:25	Flexible Transistor with All Liquid Electrodes Junjie Xiong, Dan Guo Tsinghua University, China	
11:25-11:45	The Design Method for Surface Texture of Sliding Friction Pairs Based on Machine Learning under Mixed Lubrication Zhenshun Li, Rui Li University of Science and Technology Beijing, China	
11:45-12:05	All-Solution-Processed High-Resolution and High-Fidelity Thin Film Transistors and Logic Circuits Fabricated Via a Humidity Controlled Surface Energy-Directed Assembly Process Jingwei Zhang, Zhimin Chai Tsinghua University, China	
12:05-13:30	Lunch Break	
13:30-14:00	KEYNOTE: Electronic Manufacturing Tribology Jie Cheng, Shirong Ge China University of Mining and Technology, China	Chair Zhimin Chai
14:00-14:20	FACs/Nanomagnetite/Epoxy Functional Coating with Wear-Resistant and Magnetic Properties Ting Dai University of Science and Technology Beijing, China	
14:20-14:40	Surface Modification of Polytetrafluoroethylene (PTFE) Fibers through Methyl Methacrylate (MMA) Polymerization for Self-Lubricating Composites Xuhui Sun Tsinghua University, China	
14:40-15:00	Anodization Treatment of Aluminum Alloy Inducing Formation of Low Friction Interface in Engine Oil Theo YAMANA, Motoyuki Murashima, Koshi Adachi Tohoku University, Japan	

Sept.16

60

ASIATRIB & CICT2024

15:00-15:20	Improved Tribological Performance of Al₂O₃ Fibers at Microscale Via a WS₂-PEG/WPU Self-Lubricating Sizing Agent Jionglin Zhu, Ning Wu Tiangong University, China	Chair Zhimin Chai
15:20-16:20	Coffee Break & Poster Session	
16:20-16:45	INVITED Design and Preparation of Inner Surface Coating Hongfei Shang, Tiancheng Wang, Tianmin Shao Tsinghua University, China	Chair Bin Zhang
16:45-17:05	Structure and Friction Performance of Sulfonitrocarburizing Layer Prepared by Plasma Nitrocarburizing and Low Temperature Ion Sulfurizing Zhchao Zhang, Yongyong He Tsinghua University, China	
17:05-17:25	Research on Interface Metallurgical Behavior of Plasma Jet Cladding Coating Baodan Zhang, Jiajie Kang, Ming Liu, Song Xiao, Haidou Wang China University of Geosciences (Beijing)	
17:25-17:45	Microstructure and Corrosion-Wear Property of WC10Co4Cr-AlCoCrFeNi Composite Coating Prepared by HVOF Spraying Qiang Da, Guo-zheng Ma, Jia-jie Kang, Hai-dou Wang China University of Geosciences (Beijing), China	
17:45-18:05	Nanosecond Laser Ablation of Micro-pits in Ni60/WC Coatings with Coupled Thermal-stress Simulation and Parameter Optimization Dongmei Liang, Lin Zhong Southwest Petroleum University, China	

Track 4 Tribo-chemistry and Lubricants

September 16, 2024

2F Meeting Room 16

10:10-10:40	KEYNOTE: Friction Reduction due to Boundary Lubrication Layer Formed by Additive Adsorption in Lubricant Tomoko Hirayama Kyoto University, Japan	Chair Chao Wang
10:40-11:05	INVITED: Correlation between Tribologic Performance and Simultaneous Surface Deformation on Soft-Hard Contact Interface Shuyan Yang Qingdao University of Technology, China	
11:05-11:25	Mechanochemistry of Antiwear Additives Chung Yan Leung, Jie Zhang, Hugh Spikes, Janet Wong Imperial College London, UK	
11:25-11:45	Construction of CuAAC Reaction System Induced by Friction and Its Tribological Properties Haozhe Xu ^{1,2} , Rui Dong ¹ , Xingang Wang ¹ , Meirong Cai ¹ , Feng Zhou ¹ 1. Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China; 2. Lanzhou University, China	
11:45-12:05	CO₂ Capture and Conversion into Carbon-based Tribofilm by In Situ Tribochemical Reaction for Green Lubrication Hongxiang Yu, Xiangyu Zuo, Xia Zhang, Weimin Liu Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China	
12:05-13:30	Lunch Break	
13:30-14:00	KEYNOTE: A Novel Supramolecular Gel Composite Lubricating Materials for Space Applications Jiaying Zhang ¹ , Meirong Cai ^{1,2} , Feng Zhou ¹ 1. Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China; 2. Shandong Laboratory of Advanced Materials and Green Manufacturing at Yantai, China	Chair Shuyan Yang
14:00-14:20	The Interfacial Lubrication Characteristics of Novel Lyotropic Liquid Crystal Systems Xiangqiong Zeng ¹ , Yumei Guo ² , Hanglin Li ² 1. University of Shanghai for Science and Technology, China; 2. Shanghai Advanced Research Institute, Chinese Academy of Sciences, China	
14:20-14:40	Programmable Friction: Development of Stimuli-Responsive Tribosystems Based on Ionic Liquid Mixtures Felix Gatti ¹ , Tobias Amann ¹ , Andreas Kailer ¹ , Norman Baltes ² , Marian Noack ³ , Jürgen Rühe ⁴ 1. Fraunhofer Institute for Mechanics of Materials IWM, Germany; 2. Fraunhofer Institute for Chemical Technologies ICT, Germany; 3. Fraunhofer Institute for Machine Tools and Forming Technology IWU, Germany; 4. IMTEK, Chemistry & Physics of Interfaces - CPI University of Freiburg, Germany	

14:40-15:00	Study on The Regulatory Mechanism of Lauric Acid on Morphology And Interface of Thickener of Calcium Sulfonate Grease Jiajia Jia, Peng Yue, Kun Han, Yujuan Zhang, Pingyu Zhang, Shengmao Zhang, Laigui Yu, Ningning Song Henan University, China	Chair Shuyan Yang
15:00-15:20	Elastohydrodynamic Lubrication Performance of PUMA-PSMA Supramolecular Polymer Gel Lubricant Yongqiang Wang ^{1,3} , Meirong Cai ^{1,2} , Feng Guo ³ , Feng Zhou ² 1. Shandong Laboratory of Advanced Materials and Green Manufacturing at Yantai, China; 2. Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China; 3. Qingdao University of Technology, China	
15:20-16:20	Coffee Break & Poster Session	
16:20-16:45	INVITED Tribological and Mechanochemical Properties of Nanoparticle-filled PTFE Composites Under Different Loads Chao Wang, Song Fuzhi, Wang Tingmei, Wang Qihua Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China	Chair Shinya Sasaki
16:45-17:05	Graphitic Carbon Formed by Diesters and Its Superior Tribological Performance Wei Song ^{1,2} , Jinjin Li ¹ 1. Tsinghua University, China; 2. University of Illinois at Urbana-Champaign, the United States	
17:05-17:25	Investigation of Influencing Factors in Tribochemistry of BN and TiO₂ Nanoparticles for Nanoscale Film Fabrication Yuyang Yuan, Chun Wang, Ardian Morina University of Leeds, UK	
17:25-17:45	Amino Acids-Based Ionic Liquids as Multifunctional Water-Based Additives Towards Green Lubrication Xiao Liu ¹ , Meirong Cai ^{1,2} , Feng Zhou ² 1. Shandong Laboratory of Advanced Materials and Green Manufacturing at Yantai, China; 2. Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China	
17:45-18:05	Tribological Material Removal Behavior of Boron Carbide by Different Active Metals Tian Qiu ^{1,2} , Feng Jiang ^{1,2} Huaqiao University, China State Key Laboratory of High Performance Tools, China	

Track 5 Biotribology and Biomimetics

September 16, 2024

2F Meeting Room 15

10:10-10:40	KEYNOTE: Molecular Forces and Interfacial Adhesion, Friction and Lubrication in Engineering Systems Hongbo Zeng University of Alberta, Canada	Chair Wei Tang
10:40-11:05	INVITED: Skin Tribology and Its Application in Product Development Xiangqiong Zeng ¹ , Haihang Wang ² , Yuemei Cen ² , Jinming Chen ² , Ye Wang ² 1. University of Shanghai for Science and Technology, China; 2. Shanghai Advanced Research Institute, Chinese Academy of Sciences, China	
11:05-11:25	Targeted Repair of Super-Lubricating Surfaces via Pairing Click Chemistry Li Xiang Southeast University, China	
11:25-11:45	Low Friction Performances of Orthodontic Stainless Steel Archwire and Bracket Pengfei Wang, Minghui Hao, Shiqi Cheng, Dongfeng Diao Shenzhen University, China	
11:45-12:05	Study of Friction Haptics and Tactile Perception in Bionic Skin With Gradient Tunability Changcheng Bai, Xiaolong Wang Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China	
12:05-13:30	Lunch Break	
13:30-14:00	KEYNOTE: Bioinspired Surface with Strong Wet Friction and Its Applications Huawei Chen Beihang University, China	Chair Marc Mason
14:00-14:20	From Finger Friction to Brain Activation: Tactile Perception of Surface Texture Wei Tang China University of Mining and Technology, China	
14:20-14:40	Laminar Drag Reduction in Closed Channel Using Bioinspired Textured Surfaces Shaofeng Xu, Jie Wang, Juhan Lin, Lu Junjie NingboTech University, China	
14:40-15:00	Interactions of Asymetric Spatula-Shaped Adhesive Microstructures with Rough Surfaces Zhizhen Jiang ¹ , Qian Cheng ¹ , Feodor M. Borodich ¹ , Stanislav N. Gorb ² , Xiaoqing Jin ¹ 1. Chongqing University, China; 2. University of Kiel, Germany	
15:00-16:20	Coffee Break & Poster Session	

Sept.16

64

ASIATRIB & CICT2024

16:20-16:45	INVITED Preventing Shear-induced Skin Injury Marc Masen Imperial College London, UK	Chair Xiangqiong Zen
16:45-17:05	An Investigation of Film Forming and Lubrication Behavior of Whey and Salivary Proteins Yongbao Wei ¹ , Yating Huang ¹ , Yan Wang ² , Zhihua Pang ¹ 1. Beijing Technology and Business University, China; 2. Tsinghua University, China	
17:05-17:25	Clarification of Heparin Lubrication Mechanism for The Low-Friction Catheter on A Polyurethane Surface Yujie Zhao ¹ , Takayuki Tokoroyama ¹ , Noritsugu Umehara ¹ , Ruixi Zhang ¹ , Takayuki Yorozu ² , Yusuke Ito ² , Junichi Uchida ² 1. Nagoya University, Japan; 2. Nihon Parkerizing Co., Ltd, Japan	
17:25-17:45	Friction Properties of Mucins on The Corneal Surface Yong Chen, Prashant Sharma University of Groningen, the Netherlands	

Track 6 Nanotribology and Superlubricity

September 16, 2024

2F Meeting Room 17

10:10-10:40	KEYNOTE: Hydration Lubrication in Presence of Multivalent Ions Xavier Banquy Université de Montréal, Canada	Chair Yunfei Chen
10:40-11:05	INVITED: Liquid Superlubricity Achieved with 2D Nanoflakes as Additives Jinjin Li Tsinghua University, China	
11:05-11:25	Simple but effective: Liquid Superlubricity with High Load Capacity achieved by Ionic Liquids Kunpeng Wang Shanghai University, China	
11:25-11:45	Detection and Regulation of Ultrafast Electron Energy Dissipation Behavior at The Heterojunction Interface of Two-Dimensional Materials Huan Liu Tsinghua University, China	
11:45-12:05	Enhancement of Self-Lubrication Performance of Metal-MoS₂ Composite Films by IBAD Technology Jie Jin Beijing Jiaotong University, China	
12:05-13:30	Lunch Break	
13:30-14:00	KEYNOTE: Phononic Insight into Sliding Friction, Vibration and Noise Yunfei Chen Southeast University, China	Chair Xavier Banquy
14:00-14:25	INVITED Thin Film Lubrication in Water-based Lubricants based Surface-confined Hydrogels – A New Pathway to Superlubricious Surfaces Jürgen Rühe Universität Freiburg, Germany	
14:25-14:45	Electrotunable Friction of Ionic Liquids on Curved Graphene Wei Song, Rosa M. Espinosa-Marzal University of Illinois Urbana-Champaign, the United States	
14:45-15:05	An Example of Superlubric Ferroelectricity Wei Cao Nanjing Tech University, China	
15:05-15:25	Accurate Estimation of Dynamical Quantities for Nonequilibrium Nanoscale Systems Zhi Xu, Ming Ma Tsinghua University, China	

Sept.16

66

ASIATRIB & CICT2024

15:25-16:20	Coffee Break & Poster Session	
16:20-16:50	KEYNOTE Molecular Simulations to Solve Industrial and Environmental Issues Hitoshi Washizu University of Hyogo, Japan	Chair Li Ji
16:50-17:10	Interlayer Friction Behavior of Molybdenum Ditelluride with Different Structures Xinfeng Tan, Lina Zhang, Dan Guo, Jianbin Luo Tsinghua University, China	
17:10-17:30	Research on The Mechanism of Frictional Anisotropy Based on 2D SiP Zishuai Wu ¹ , Tongtong Yu ² , Nian Yin ¹ , Ke He ¹ , Zhen Li ¹ , Daoai Wang ² , Zhinan Zhang ¹ 1. SJTU, China; 2. Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China	
17:30-17:50	AFM Probe for Measuring Ultra-Low Friction Coefficient of 10⁻⁶ Yushan Chen, Jiang Liang, Linmao Qian Southwest Jiaotong University, China	
17:50-18:10	Study on Conductive Edge-Warping Graphite Mesas for Robust Structural Superlubricity Weijia Feng ^{1,2,3} , Ying Liu ³ , Ming Ma ^{1,2,3} , Jinhui Nie ³ 1. Tsinghua University, China; 2. Center for Nano and Micro Mechanics of Tsinghua University, China; 3. Research Institute of Tsinghua University in Shenzhen, China	

Symposium 2 Triboelectric Nanogenerators for Energy and Sensors

Time (September 16)		Speaker	Title	Chair
10:10-10:40	Keynote Lecture	Jin Yang	TENG-based Pulse Wave Sensor	Weiqiang Zhang
10:40-11:05	Invited Talk	Chi Zhang	Tribovoltaic Effect and Tribotronics	
11:05-11:30	Invited Talk	Yan Zhang	Progress in Triboelectric Nanogenerators for Resolving Technological Bottlenecks in the Petroleum Industry	
11:30-11:50	Oral Talk	Zhi Zhang	High Performance Tribovoltaic Nanogenerator for Self-Powered Sliding Ball Bearing	
11:50-13:30	Lunch Break			
13:30-13:55	Invited Talk	Qing Yang	Wavefront Shaping based Multimode Fiber Imaging and Sensing under Movement	Chi Zhang
13:55-14:20	Invited Talk	Weiqiang Zhang	Design and Utilization of Triboelectric Sensors for Empowering Information Security	
14:20-14:40	Oral Talk	Yang Yu	Substantially Boosting Performance of Triboelectric Nanogenerators via Triboelectrification Enhancement Effect	
14:40-15:00	Oral Talk	Ye Yang	Long-life Diamond-based Tribovoltaic Nanogenerator	
15:00-15:20	Oral Talk	Ju Ming	Enhanced Output Performance of Triboelectric Nanogenerator Utilizing the Floating Structure Design for Harvesting Wave Energy	
15:20-15:50	Break			
15:50-16:15	Invited Talk	Jun Dong	MEMS Device and System For Friction Energy Harvesting at Liquid-Solid Interface	Hengyu Li
16:15-16:35	Oral Talk	Xiaohui Lu	Tribboelectric Nanogenerators: Driving the Future of Intelligent Transportation Systems	
16:35-16:55	Oral Talk	Yuying Cao	Continuous Fabrication of Triboelectric Yarns for Strain Sensors	
16:55-17:15	Oral Talk	Dong Zhu	Self-powered Flow Sensing for Automobile based on Triboelectric Nanogenerator with Magnetic Field Modulation Mechanism	

Track 8 Aerospace and Ocean Tribology

September 16, 2024

3F Meeting Room 30

10:10-10:35	INVITED Effects of H2O on friction of MoS2: A Study from DFT Computations and Macroscopic Sliding Experiments Zaixiu Yang, Kaixiong Gao, Bin Zhang, Junyan Zhang Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China	Chair Guoxin Xie
10:35-10:55	Solid-Liquid Coupled Microcapsules and Their Potential Aerospace Applications Yilong Ren ¹ , Guoxin Xie ² , Shaowei Feng ¹ 1. Beijing Institute of Astronautical Systems Engineering, China; 2. State Key Laboratory of Tribology in Advanced Equipment, China	
10:55-11:15	Research on Dual Electric Field Mutual Inductive Multilayer Triboelectric Nanogenerator for Ocean Energy Collection YingTing Wang, JianMing Wen, ChangCheng Bao, JiJie Ma, YiLi Hu, ZhongHua Zhang, JianPing Li ZheJiang Normal University, China	
11:15-11:35	Tribocorrosion Performance of CrMoSiCN/Ag Composite Coatings Sliding Against WC+6%Co Balls in Artificial Seawater Jianguo Qian ^{1,2} , Maoda Zhang ³ , Fei Zhou ^{1,2} , Qianzhi Wang ² , Zhifeng Zhou ⁴ 1. Nanjing University of Aeronautics and Astronautics, China; 2. Nanjing University of Aeronautics and Astronautics, China; 3. AVIC Shenyang Aircraft Industry (Group) Co., Ltd, China; 4. City University of Hong Kong, Hong Kong, China	
11:35-11:55	Research on Superslip Drag Reduction of Unmanned Underwater Vehicles Based on Composite Nanoporous Coating Yukun Wei, Liran Ma Tsinghua University, China	
11:55-13:30	Lunch Break	
13:30-13:50	Effect of Heat Flux Control on Frictional Heat between Bristles and Rotor for a Multi-Stage Brush Seal Yixiao Yang, Dan Sun, Huan Zhao, Enyu Liu, Huanze Xu Shenyang Aerospace University, China	Chair Zaixiu Yang
13:50-14:10	Research on The Mechanism of Aerospace Fasteners Biting Based on Tribological Analysis Methods Jie Wang ¹ , Shaowei Feng ¹ , Ying Li ² , Yating Liu ³ , Binbin Liu ⁴ , Lu Yan ¹ , Shuai Wang ¹ , Hongli Lu ¹ , Yilong Ren ¹ , Jiayun Liu ¹ 1. Beijing Institute of Astronautical Systems Engineering, China; 2. Beijing University of Technology, China; 3. Beijing ShouHang science and technology development Co., Ltd, China; 4. University of Science and Technology Beijing, China	
14:10-14:30	Nonlinear Dynamic Analysis of Three-Point Angular Contact Ball Bearing Under Variable-Load Condition Siqi Guo, Wenzhong Wang Beijing Institute of Technology, China	

Sept. 16

69

ASIATRIB & CICT2024

14:30-14:50	Friction and Wear Characteristics of Open Stern Shaft Lip Seal Runmei Ma, Keying Xiao, Shuangxi Li, Zhichao Gong, Zesheng Huang Beijing University of Chemical Technology, China	Chair Zaixiu Yang
14:50-15:10	A New Bearing Dynamics Model Considering Cage Flexibility by Shell Elements Shuaiyu Pang, Wenzhong Wang, He Liang, Haibo Zhang Beijing Institute of Technology, China	
15:10-16:20	Coffee Break & Poster Session	
16:20-16:40	Friction and Wear Behaviors of NiTi Based Composites at Elevated Temperature Yuxuan Wang ¹ , Lina Zhu ¹ , Guoxin Xie ² , Lin Zhang ² 1. China University of Geosciences, China; 2. Tsinghua University, China	Chair Dan Sun
16:40-17:00	Tribo-Informatics Approach for Analyzing the Tribological Performance of Bushings in The Variable Stator Vane System Ke He ¹ , Zhen Li ¹ , Nian Yin ¹ , Zishuai Wu ¹ , Kai Sun ² , Zhinan Zhang ¹ 1. Shanghai Jiao Tong University, China; 2. AECC Commercial Aircraft Engine Company Limited, China	
17:00-17:20	Investigation into The Tribological Characteristics of PTFE Slide System for Offshore Platform Jacket Chao Peng ^{1,2} , Haidong Chen ¹ , Zhiying Wei ¹ , Kan Deng ³ , Minfeng Wang ³ 1. Sun Yat-sen University, China; 2. Southern Marine Science and Engineering Guangdong Laboratory, China; 3. COOEC-Fluor Heavy Industries Co., Ltd., China	
17:20-17:40	Influence of Surface Slip on Hydrodynamics and Flow Field around A Two-Dimensional Hydrofoil at A Medium Reynolds Number Manfu Zhu, Weixi Huang, Liran Ma, Jianbin Luo Tsinghua University, China	
17:40-18:00	Semi-Analytical Model for Analyzing Microstructural Effects in Conductive Sliding Contacts Xiaowu Luo, Pu Li, Qinghua Zhou, Jinran Li, Keao Qi, Li Yang Sichuan University, China	

Track 9 Industrial Tribology and Instruments

September 16, 2024		2F Meeting Room 13
10:10-10:40	KEYNOTE Electric Currents in Mechanical Drivetrains – Challenges and Opportunities Oliver Koch, Simon Graf RPTU University of Kaiserslautern-Landau, Germany	Chair Junjie Lu
10:40-11:05	INVITED Effect of Grease on NVH Performance of CVJ for New Energy Vehicles Baojie Wu Sinopec Lubricant Co., Ltd	
11:05-11:25	Friction and Wear Evolution Mechanism and Service Performance Degradation Characteristics of Heavy-Load Transmission Wire Rope Xiangdong Chang, Yuxing Peng China University of Mining and Technology, China	
11:25-11:45	Replacing Copper in Composites with Industrial Waste: A Novel Approach for Cu-Free Resin-Based Braking Material Kaikui Zheng, Chenghui Gao, Youxi Lin Fuzhou University, China	
11:45-12:05	Tooth Backlash Inspired Comb-Shaped Single-Electrode Triboelectric Nanogenerator for Self-Powered Condition Monitoring of Gear Transmission Song Wang, Qinkai Han Tsinghua University, China	
12:05-13:30	Lunch Break	
13:30-14:00	KEYNOTE Preparation and Application Research of Perfluoropolyether Oil-based Ferrofluid Decai Li Tsinghua University, China	Chair Oliver Koch
14:00-14:25	INVITED Friction and Lubrication Technology of Aerospace Bearings Wenchao Li Luoyang Bearing Research Institute Co., Ltd, China	
14:25-14:45	Compensation Algorithms for Lubrication Uncertainties: Enhancing Accuracy and Robustness in Ultrasonic Lubricant Film Thickness Measurement Pan Dou ^{1,2} , Min Yu ¹ , Tonghai Wu ² , Tom Reddyhoff ¹ 1. Imperial College London, British; 2. Xi'an Jiaotong University, China	
14:45-15:05	A Study on the Feasibility of Using Water-Based Lubricant of Siloxane Polymers Emulsion for the Hot Stamping of Aluminum Alloys Liang Deng ¹ , Siyuan Lou ¹ , xuan Mao ¹ , Braham Prakash ² 1. Shanghai Institute of Technology, China; 2. Lulea University of Technology, Sweden	

15:05-15:25	Electrified Tribotesting: An Approach to Screening e-Fluids for Electric Vehicles Damien Yiyuan Khoo, Melinda Bullaro Bruker Nano Inc., America	Chair Oliver Koch
15:25-15:45	Study on Anti-Adhesion and Tribological Properties of Coal Conveyor Belt Binhui Zhang ¹ , Guoxin Xie ^{2,3} , Lin Zhang ^{2,3} , Jiajie Kang ¹ 1. China University of Geosciences, China; 2. Tsinghua University, China; 3. Tsinghua University, China	
15:45-16:20	Coffee Break & Poster Session	
16:20-16:45	INVITED Tribo-Testing System Design for Sustainability Jun Xiao Rtec Instruments, China	Chair Ying Liu
16:45-17:05	Capturing Every Moment: Unravelling Friction, Wear, and Transfer Mechanisms of PTFE Using In-Situ High-Bandwidth Microscopy Kian Kun Yap, Janet Wong, Marc Masen Imperial College London, UK	
17:05-17:25	Solvothermal Synthesis of Ceria Nanoparticles and Their Chemical Mechanical Polishing Properties Zhenyang Wang, Tongqing Wang, Xinchun Lu Tsinghua University, China	
17:25-17:45	A Quantitative Characterization Model for Nonlinear Friction of O-rings Xiang Zhao, Ying Liu, Fei Guo Tsinghua University, China	
17:45-18:05	Influence of Friction Pair Characteristics on Tribological Properties of Carbon-base Coated Self-Lubricating Radial Spherical Plain Bearings Zhen Li ¹ , Zhinan Zhang ¹ , Guozheng Ma ² , Nian Yin ¹ , Ke He ¹ , Zishuai Wu ¹ 1. Shanghai Jiao Tong University, China; 2. Academy of Armored Forces Engineering, China	

Tuesday, September 17, 2024

Plenary Room		3F Convention Hall	
September 17, 2024			
08:30-09:10	Theories for Contact and Lubrication in Multifield and A Generalized Multifield Reynolds Equation for EV Related Issues	Qian Wang Northwestern University	Chair Jiadao Wang
09:10-09:50	The Many Facets of Green Liquid Superlubricity	Jean Michel Martin Ecole Centrale de Lyon	Co-Chair Linmao Qian

Track 1 - I Friction and Lubrication

September 17, 2024		3F Function Hall 1
10:10-10:40	KEYNOTE Brush-Forming Polymers as Additives for Lubricating Oils Nicholas Spencer ETH Zurich, Switzerland	Chair Chenhui Zhang
10:40-11:05	INVITED Study on Shear Behavior and Friction Mechanism of Water Molecules at Low Temperature Interface Yuan Liu, Liran Ma Tsinghua University, China	
11:05-11:25	Effect of Hydrated Ions and Wettability on Ice Friction Chang Dong, Liran Ma Tsinghua University, China	
11:25-11:45	Lubrication Calculation of Polymer Materials Considering Surface Force Mingbo Zhao, Shuowen Zhang, Tianyi Han, Chenhui Zhang Tsinghua University, China	
11:45-13:30	Lunch Break	
13:30-14:00	KEYNOTE How Advanced Safe and Sustainable by Design Materials and Lubricants Meets Tribology Amaya Igartua, Gemma Mendoza, Francesco Pagano, Patricia Casla, Alberto Alberdi, Itziar Alonso, Ana Aranzabe Fundacion TEKNIKER, Spain	Chair Xinchun Chen
14:00-14:20	Synthesis of Long Term Superlow-Friction Carbon Films from Al/Cr/Si Element-Doped Acetylene Plasmas Jiaxu Zhang, Tianbao Ma Tsinghua University, China	

14:20-14:40	Friction and Energy Dissipation of Graphene Manipulated via Moire Superstructure Zhao Liu ^{1,3} , J.G. Vilhena ^{2,3} , Junyan Zhang ¹ , Ernst Meyer ³ 1. Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China; 2. Universidad Autónoma de Madrid, Spain; 3. University of Basel, Switzerland	Chair Xinchun Chen
14:40-15:00	Catalytic Superlubricity via In-Situ Formation of Graphene during Sliding Friction on Au@a-C:H Films Qian Jia Tsinghua University, China	
15:00-15:20	Multiscale Tribological Study of Titanium-Doped a-C Films Silong Zhang Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China	
15:20-15:40	Coffee Break	
15:40-16:05	INVITED Establishment and Stability of Superlubricity Based on Heterogenous Interfacial Structures Xinchun Chen Tsinghua University, China	Chair Yitian Peng
16:05-16:25	Detection and Modulation of Ultrafast Friction Energy Dissipation at Superlubricity Interfaces Dameng Liu Tsinghua University, China	
16:25-16:45	Research on Solid Superslip Technology of Environmentally Adaptive Diamond like Coatings Chuntian Liu Tsinghua University, China	
16:45-17:05	Ultra-low Friction of Two-Dimensional Materials Based on Mechanical-Scanning Using Atomic Force Microscopy Yitian Peng, Shi Bin Donghua University, China	
17:05-17:25	Mechanisms for the Emergence and Evolution of Atomic-Level Defects at Two-Dimensional WS2 Friction Interfaces Rui Han Tsinghua University, China	
17:25-17:45	Characterization of Lubrication Properties of Various Additives and Isooctyl Stearate Hongyang Ma, Baishu Li, Zhuojun Chen Shenyang Ligong University, China	

Track 1 - II Friction and Lubrication

September 17, 2024		3F Function Hall 2
10:10-10:40	KEYNOTE Understanding the Friction Laws of Amontons and Coulomb by Evaluating the Real Contact Area Mitjan Kalin, Petra Jan University of Ljubljana, Slovenia	Chair Jiliang Mo
10:40-11:05	INVITED Manufacturing and Performance of Fused Filament Fabricated PEEK Composite Sliding Layers on Different Metallic Substrates Leyu Lin Rheinland-Pfälzische Technische Universität (RPTU) Kaiserslautern-Landau, Germany	
11:05-11:25	Model Braking Friction Material: A Lever for The Study of the Microstructure – Properties – Friction Behavior Link Anne-Lise Cristol ¹ , Yannick Desplanques ¹ , Mouna Baklouti ² , Nesrine Hentati ² , Fatma Makni ² , Riadh Elleuch ² 1. Centrale Lille, France; 2. University in Sfax, Tunisia	
11:25-11:45	Study on Tribological Properties of Polyvinyl Alcohol Hydrogel Composite PEEK Matrix Materials Wanxing Xu, Chenhui Zhang Tsinghua University, China	
11:45-13:30	Lunch Break	
13:30-14:00	KEYNOTE Discrete Contact Mechanics and its Applications in Tribology Irina G. Goryacheva Russian Academy of Sciences, Russia	Chair Leyu Lin
14:00-14:20	Microstructure Evolution, Mechanical Properties and Tribological Performances of Cu-based Composites Incorporated with Cu-coated Ti3SiC2 Meirong Yi, Wenhui Xu Nanchang University, China	
14:20-14:40	Low-Density Self-Lubricating Composites with “IPN Structure-Liquid Lubricant” Coupling Mechanism Weihua Cao, Xiao Yang Yanshan University, China	
14:40-15:00	Research on the Mechanical and Tribology Performance of Copper-Based Materials Reinforced with Ternary Ceramics Containing MAX Phase Zonglong Gao, Zhuan Li Central South University, China	
15:00-15:20	Tunable Tribology Properties of Shape Memory Polymer Zenghui Yang, Hui Liu, Qihua Wang Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China	

15:20-15:40	Coffee Break	
15:40-16:05	INVITED Effect of Pitch Coke Type on Braking Behaviors of Copper Metal Matrix Composites Mating with 30CrMnSi Steel and C/C-SiC Yuxuan Xu, Qi Chen, Haibin Zhou, Ping Ping Yao Central South University, China	Chair Guoxin Xie
16:05-16:25	3D Printing of Self-Lubricating Polymeric Composites and Devices Xiaolong Wang ¹ , Tao Wu ^{1,2} , Xinle Yao ³ 1. Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China; 2. Shandong Laboratory of Advanced Materials and Green Manufacturing at Yantai, China; 3. Shihezi University, China	
16:25-16:45	One Step Filling of Self-lubricating Composites with Micro-Oil Droplets and Its Application Tao Wu 1. Shandong Laboratory of Advanced Materials and Green Manufacturing at Yantai; 2. Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China	
16:45-17:05	Tribological Properties of MXene-Enhanced Lubricant oil@PI Epoxy Composites Under Harsh Conditions Yingying Guo, Linqing Bai Qingdao University of Technology, China	
17:05-17:25	Influences of Ferrochrome on The Micro and Macro Tribological Properties of Cu-based Composites Haibin Zhou ¹ , PingPing Yao ² , Xiubo Liu ¹ , YuXuan Xu ² , Xing Wang ² 1. Central South University of Forestry and Technology, China; 2. Central South University, China	
17:25-17:45	Evaluation of Tribological Potential of Ti3C2Tx-MXene reinforced Ni3Al Composites Sudesh Singh, Chenhui Zhang, XinChun Chen Tsinghua University, China	

Track 1 - III Friction and Lubrication

September 17, 2024		3F Reception Hall
10:10-10:40	KEYNOTE Ammonia as Carbon-Free Energy Carrier and Its Impact on Engine Oil Performance Nicole Dörr, Adam Agocs, Charlotte Besser, Marcella Frauscher AC2T research GmbH, Austria	Chair Jing Wang
10:40-11:05	INVITED Effects of Thiophosphate Extreme Pressure Anti-Wear Agents on Anti-Shudder Performance of Transmission Oil Zechao Di, Yuan Li, Mengjia Zhang, Dongsheng Huang Dalian Lubricating Oil Research & Development Institute, China	
11:05-11:25	Influence of Grease Containing Mineral Particles on Friction and Wear Characteristics Between Spiral Wires Inside Wire Rope Kun Huang, Yuxing Peng China University of Mining and Technology, China	
11:25-11:45	Study on the Interaction Mechanism Between Degradation Behavior of Grease and Evolution of Friction Interface Properties Under Static Storage Conditions Caixia Zhang, Lianpeng Bai, Zhifeng Liu, Jiaming Si Beijing University of Technology, China	
11:45-12:05	Electro-Tribological Investigation of Greases for EVs Kartik Pondicherry, Paul Staudinger Anton Paar GmbH, Austria	
12:05-13:30	Lunch Break	
13:30-14:00	KEYNOTE Analysis Method for Mechanical Seals: Integrating Physical Models with Data-Driven Approaches Weifeng Huang Tsinghua University, China	Chair Guibin Tan
14:00-14:20	Numerical Analysis of Hydrodynamic Lubrication Performance in a Carbon-Segmented Seal based on the Local Differential Quadrature-Lagrange Method Shuang Wang, Dan Sun, Wenfeng Xu, Huan Zhao Shenyang Aerospace University, China	
14:20-14:40	Friction and Wear Characteristics of Circumferential Carbon Seal Yisa Wu, Huan Zhao, Dan Sun, Shuaifang Wen, Zhuang Wang, Boran Yu Shenyang Aerospace University, China	
14:40-15:00	Seal Updated Numerical Method Considering Contact Wear Behaviors to Reveal Lubrication Transition Mechanism Tuyuan Yin, Wei Dasheng, Fu Jian Beihang University, China	
15:00-15:20	Numerical and Experimental Study on the Influence of Stages on the Leak-Age Flow and Heat Transfer Characteristics of Brush Seal Xiyue Lin, Dan Sun Shenyang Aerospace University, China	

15:20-15:40	Coffee Break	
15:40-16:05	INVITED Study on the Performance of Rotary Lip Seal Considering Eccentricity Guibin Tan ¹ , Jinfu LI ¹ , Xing Huang ^{1,2,3} 1. Guangdong University of Technology, China; 2. Tsinghua University, China; 3. National Engineering Research Center of Rubber&Plastic Sealing, China	Chair Weifeng Huang
16:05-16:25	Numerical Study on Design and Leakage Characteristics of Brush Seal Between Counter-Rotating Shafts Huanze Xu, Dan Sun, Huan Zhao, Guoze Ren, Wenfeng Xu Shenyang Aerospace University, China	
16:25-16:45	Study on Leakage Characteristics of Surface Contact Static Seal Shuaifang Wen, Dan Sun, Jianhui Li, Zemin Yang Shenyang Aerospace University, China	
16:45-17:05	Controlling Friction Energy Dissipation by Ultrafast Interlayer Electron-Phonon Coupling in WS₂/Graphene Heterostructures Chong Wang, Huan Liu, Jianbin Luo, Dameng Liu Tsinghua University, China	
17:05-17:25	Frictional Interval Phonon Ultrafast Dissipation in Few Layer Graphene Haolei Dai, Yujin Wang, Zibo Liu, Dameng Liu Tsinghua University, China	
17:25-17:45	Twist Angle-Dependent Interlayer Hybridized Exciton Lifetimes in van der Waals Heterostructures Shihong Chen, Huan Liu, Dameng Liu Tsinghua University, China	
17:45-18:05	Effects of Defect in Interlayer Exciton Lifetimes on MoS₂/WS₂ van der Waals Heterostructures during Friction Process Zejun Sun, Huan Liu, Dameng Liu Tsinghua University, China	

Track 2 Wear and Fatigue

September 17, 2024		4F Function Hall 3
10:10-10:40	KEYNOTE The Wear Resistance Design of Typical Tribological Materials under Harsh Operating Conditions Pingping Yao, Xu Yuxuan, Wang Xing, Zhou Haibin Central South University, China	Chair Zhiying Ren
10:40-11:00	Simulation and Prediction of The Effects of Corrosion Time and Fretting Wear Cycles on Wear Morphology and Mechanical Behavior of Wire Gaofang Wang ¹ , Magd Abde ¹ Wahab ² , Yuxing Peng ¹ 1. China University of Mining and Technology, China; 2. Gent University, Japan	
11:00-11:20	Nanoscale Adhesive Wear Law for Metals Diankai Zhang, Yang Wang Southwest Jiaotong University, China	
11:20-11:40	Acoustic Emission Analysis for Thrust Bearing Condition Monitoring Renguo Lu, Hiroshi Tani, Shohei Kawada, Shinji Koganezawa Kansai University, Japan	
11:40-13:30	Lunch Break	
13:30-13:50	Effect of Surface Strengthening Techniques on The Fretting Fatigue Hongjian Zhang, Shaomeng Li, Haitao Cui Nanjing University of Aeronautics and Astronautics, China	Chair Pingping Yao
13:50-14:10	Study on The Tribological Characteristics and Damage Failure of Elevator Traction Steel Belt Xiuheng Zhang, Yuxing peng China University of Mining and Technology, China	
14:10-14:30	Tribological Investigation on The Mechanics of Adhesive Layer Formation and Its Impact on Wear Mechanism in Ti6Al4Vcutting Nan Xu, Dongze Wang, Nikil Kapur, Chris Taylor, Harvey Thompson, Ardian Morina University of Leeds, UK	
14:30-14:50	Study on The Rolling Contact Fatigue Test Method and Damage Mechanism of Rails Based on Dry-Wet Alternation Honghao Wang, Wenjian Wang, Qiyue Liu, Haohao Ding, Suyue Zhang, Qiang Lin Southwest Jiaotong University, China	
14:50-15:10	Numerical and Experimental Studies of Fretting Wear Behaviors of Cast Polyurethane Elastomers Jian Yu ¹ , Chengjiao Yu ¹ , Shuangcheng Yu ² 1. Hebei University of Technology, China; 2. Xingyi Metal Group, China	

15:10-15:40	Coffee Break	
15:40-16:00	Fundamental Role of Cu-BDC MOFs in Modifying the Tribological Performance of Epoxy Composites Xianqiang Pei, Zhancheng Zhang, Yan Wang, Qihua Wang, Tingmei Wang Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China	Chair Wen Yue
16:00-16:20	Wear Resistance in Friction Systems with Bearing Steels in Refrigerant Oil Added Nanodiamond Kensei Yoshimachi ¹ , Norihiro Kimoto ² , Motoyuki Murashima ¹ , Koshi Adachi ¹ 1. Tohoku university, Japan; 2. Daicel Corporation, Japan	
16:20-16:40	Evolution of Fracture and Wear in Asperity Interaction with Ploughing Effect Dongheng Han, Haibo Zhang Beijing Institute of Technology, China	
16:40-17:00	Dynamic Modeling and Condition Monitoring of Spalling Fault of Planetary Gear System Yifan Wang, Wei Cao, Rui Su, Letian Ding, Congrui Xv, Zhenyuan Gou Xi'an Technological University, China	
17:00-17:20	Dynamic Response and Damage Behavior of Impact Wear for Polycrystalline Diamond Compact under Low Kinetic Energy Impact Dezhong Meng, Yuzhu Guo, Wen Yue China University of Geosciences (Beijing), China	
17:20-17:40	Research on Wheel/Rail Contact Characteristic and Rail Material Damage Under Special Operating Conditions of Trains Yunpeng Wei, Jihao Han, Tao Yang Qinghai University, China	
17:40-18:00	Predictions of Fatigue Life and Damage Analyses on Rail Materials Jihao Han, Yunpeng Wei Qinghai University, China	

Track 3 - I Coatings and Surfaces Engineering

September 17, 2024		4F Function Hall 5
10:10-10:40	KEYNOTE Processes and Setups of Green Chemical Mechanical Polishing with High Efficiency and Low Damage Zhenyu Zhang Dalian University of Technology, China	Chair Zulfiqar Khan
10:40-11:05	INVITED Study of Co-DLC Coatings in Combination with Functionalized Polymers for Enhanced Wear Resistance and Friction Reduction Fabio Emanuel De Sousa Ferreira University of Coimbra, Portugal	
11:05-11:25	Origin of Superlow Friction in Strengthening DLC Films for Robust Superlubricity at Ultrahigh Contact Stress Wenli Deng, Chen Xinchun,Luo Jianbin Tsinghua University, China	
11:25-11:45	Improvement of Tribological Performance of DLC on Si-Al Interlayers through PVD Technique Kaidier Kaidier Ningbo institute of materials technology and engineering, China	
11:45-12:05	Influencing Mechanisms of Contact Pressure on The Superlubricity of a-C:H Films: Key Role of In-situ Structural Evolution of Nanoclustering Structures in Transfer Films Qingyuan Yu, Xinchun Chen, Chenhui Zhang Tsinghua University, China	
12:05-13:30	Lunch Break	
13:30-14:00	KEYNOTE Experimental Techniques and Numerical Methods in Developing Nano Coatings for Tribological Applications Zulfiqar Khan Bournemouth University, UK	Chair Zhenyu Zhang
14:00-14:20	Lubrication Behaviors of Metal Doped MoS2 /a-C:H Heterogeneous Interface at Large Contact Scale Kai Wang, Xinchun Chen Tsinghua University, China	
14:20-14:40	Achieving Superlow Friction State in a-C:H:Si Films under Atmospheric Environment by Constructing Island Texture Surfaces Yinhui Wang ¹ , Xinchun Chen ² 1. Southern University of Science and Technology, China; 2. Tsinghua University, China	
14:40-15:00	Improved Tribological Performance of a-C:H/a-C:H:Si:O Coated Polyether Ether Ketone by Introducing Graded Interfacial Structure Xianchun Jiang, Peng Guo, Yinshui Liu, Rende Chen, Aiyang Wang, Peiling Ke Huazhong University of Science and Technology, China	

15:00-15:20	Effect and Regularity of Ultrasonic Surface Rolling Peening on the Wear Performance of H13 Steel of TBM Hob Rims Yalong Li, Xiuyu Chen, Wenjun Jiang, Wenbin Ma, Shizhang Liu, Yi Li, Ya Li Jimei University, China	Chair Zhenyu Zhang
15:20-15:40	Coffee Break	
15:40-16:05	INVITED Superlubricity Depending on Interface Design with Amorphous Carbon Preotection Bin Zhang Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China	Chair Fabio Emanuel De Sousa Ferreira
16:05-16:25	Unleashing Ag Self-Migration: Advancing High-Temperature Tribological Properties of Nanolayer MoS₂/Ti/Ag Composite Yukang Yuan, Xinchun Chen Tsinghua University, China	
16:25-16:45	Mesh-Like Carbon Nanotube Multilayer Coating for Enhanced Sliding Electrical Contact Durability Sang-Hoon Lee, Dae-Jin Kim, Hyun-Joon Kim Kyungpook National University, Korea	
16:45-17:05	Stable Low Friction of sp² Nanocrystallited Carbon Films in Vacuum Zelong Hu, Xue Fan, Koshi Adachi, Dongfeng Diao Shenzhen University, China	
17:05-17:25	Application of Graphene-Reinforced Silver-Based Electrical Contact Materials in Relays Manfang Tang, Ming Zhou Guangxi University of Science and Technology, China	
17:25-17:45	Multilayer Coatings of Periodically Co-deposited Graphene and Ag Substrate: Improving the Electrified Friction Interface by Modifying the Strength-Ductility Combination Jingwei Gao ¹ , Ming Zhou ¹ , Gangqiang Cheng ¹ , Manfang Tang ¹ , Luyi Sun ¹ , Yuxin Chen ¹ , Chaogui Luo ² 1. Guangxi University of Science and Technology; 2. Guangxi Tsinglube New Material Technology Co., Ltd., China	
17:45-18:05	Enhancing Corrosion Protection and Tribological Performance with Mussel Adhesive Protein-Based Multifunctional Films Dingwei Liu ¹ , Jie Cheng ¹ , Fan Zhang ² 1. China University of Mining and Technology, China; 2. University of Sussex, UK	

Track 3 - II Coatings and Surfaces Engineering

September 17, 2024		3F Meeting Room 30
13:30-13:55	INVITED Reduction of Friction Coefficient in Water Boundary Lubrication by Silica Nanoparticles Supported on Si-DLC Coating Hiroyuki Kousaka, Masataka Uchiyama, Natsuo Horiba Gifu University, Japan	Chair Jose Daniel Biasoli de Mello
13:55-14:15	Synthesis and Characterization of Quaternary Alloys Coating Electrodeposited with Different Slide-roll Ratio Friction Yang Song, Yonggang Meng Tsinghua University, China	
14:15-14:35	Durable and Failure Tolerable Carbon-Based Tribocorrosion Protective Coating with Interface-Graded Multilayer Structure Hao Li, Peng Guo, Aiyang Wang Ningbo Institute of Materials Technology and Engineering, China	
14:35-14:55	Tribo-Corrosion Properties of CrN and CrN/DLC Coatings in Seawater Shuling Zhang, Tenglong Huang, Xiangdong Yang, Xinghua Ma, Feng Guo Qingdao University of Technology, China	
14:55-15:40	Coffee Break	
15:40-16:00	Tribological Behaviour of Fe₃C-CNT Bilayers Grown by Plasma-Induced Metal Dusting: Insights into The Effect of Nanotubes Catalyst Particles on Friction and Wear Jose Daniel Biasoli de Mello Universidade Federal de Santa Catarina (UFSC), Brazil	Chair Hongkai Li
16:00-16:20	Synergistic Lubrication and Fracture Mechanisms of Composite Surface Textures Haohan Zhang, Jing Ni Hangzhou Dianzi University, China	
16:20-16:40	High Temperature Tribology of Inconel Alloy with B4c Reinforcement Ana Maria Fuentes Caparros ¹ , Jiri Nohava ¹ , Adam Novotny ² , Jakub Karmacek ² , Pavel Rohan ² 1. Anton Paar TriTec, Austria; 2. Czech Technical University in Prague, Prague	
16:40-17:00	The Formation of Low Friction Interface in Friction System Using Laser Textured Aluminum Alloy in Engine Oil at Low Temperature Shota Inoue, Motoyuki Murashima, Koshi Adachi Tohoku university, Japan	
17:00-17:20	Universal Route to Uniform Nanocrystalline Metallic Cladding for Superior Strength-Plasticity and Wear Resistance Dechao Zhao Shanghai Jiao Tong University, China	
17:20-17:40	Tribochemical Reaction for Continuous Low-Friction of Hydrogenated Carbon Nitride Coatings in Dry Environments – Effect of Water and Oxygen on the Tribochemical Reaction Kazuya Kuriyagawa, Tatsuki Tamagawa, Motoyuki Murashima, Koshi Adachi Tohoku University, Japan	

Track 4 Tribo-chemistry and Lubricants

September 17, 2024

2F Meeting Room 16

10:10-10:40	KEYNOTE Tribology Contributing to A Carbon-Neutral Society Shinya SASAKI Tokyo University of Science, Japan	Chair Long Wang
10:40-11:05	INVITED Ascorbyl Palmitate Vitamin C, A New Additive for Environmentally-Acceptable Lubrication of Steel Maria Isabel De Barros Bouchet ¹ , Jean-Michel Martin ¹ , Yun Long ² , Sophie Loehle ³ 1. Ecole Centrale Delyon, France; 2. Shell (Shanghai) Technology Co., Ltd., China; 3. TotalEnergies, OneTech, 69360, Solaize, France	
11:05-11:25	Study on The Structure-Activity Relationship of The Anti-Wear and Anti-Oxidation Properties of Plant Oils and Additives Jianfang Liu ¹ , Rongrong Zhang ¹ , Yaoyun Zhang ¹ , Chenglingzi Yi ¹ , Sicheng Yang ¹ , Dan Jia ² 1. Wuhan Polytechnic University, China; 2. Wuhan Research Institute of Materials Protection, China	
11:25-11:45	Alkyl-Phosphate Protic Ionic Liquid as A Green Lubricant for Heavy Duty Applications Ju Shu ^{1,2} , Janez Kovac ² , Cayetano Espejo ¹ , Mitjan Kalin ² , Ardian Morina ¹ 1. University of Leeds, UK; 2. University of Ljubljana, UK	
11:25-11:45	Phosphate-Based Poly(Ionic Liquid)S: The Preparation, Characterization and Evaluated as Potential Lubricant Additives Qiang Chen ¹ , Ming Yi ¹ , Meirong Cai ^{1,2} 1. Shandong Laboratory of Advanced Materials and Green Manufacturing at Yantai, China; 2. Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China	
12:05-13:30	Lunch Break	
13:30-14:00	KEYNOTE Beyond Friction: Multimodal Triboemission and Non-Trivial Pathways of Energy Dissipation Roman Nevshupa Eduardo Torroja Institute of Construction Sciences, CSIC, Spain	Chair Xinhu Wu
14:00-14:20	Impact of Ammonia as a Marine Fuel on Cylinder Oils and System Oils Edward Ng, Vincent Ang, Chao Xiang Chan, Irwan Jaafar Gulf Marine Pte. Ltd., Singapore	
14:20-14:40	Enhanced Gear Durability by Lubricant Technology in Application to Transaxle for Electric Vehicles Keiichi Narita, Daisuke Takekawa, Hiroyuki Tatsumi, Kazushige Matsubara Idemitsu Kosan Co.,Ltd., Japan	
14:40-15:00	Tribological Properties of Hybrid Electric Vehicle Engine Oil After Emulsification Yan Wang, Chenhui Zhang, Jiping Zhang, Hongyu Li Tsinghua University, China	

15:00-15:20	Atomic and Molecular Scale Simulations of Liquid Lubricants And Additives: From Phenomena To Mechanisms Junqin Shi Northwestern Polytechnical University, China	Chair Xinhu Wu
15:20-15:40	Coffee Break	
15:40-16:05	INVITED High Temperature Lubricity and Anti-Oxidation of Silicate Glass for Hot Metal Forming Long Wang, Minghui Lang Northwestern Polytechnical University, China	Chair Junqin Shi
16:05-16:25	Load and Velocity Boundaries of Oil-Based Superlubricity Using 1,3-Diketone Ke Li ¹ , Tobias Amann ² , Chengqing Yuan ¹ 1. Wuhan University of Technology, China; 2. Fraunhofer Institute for Mechanics of Materials IWM, Germany	
16:25-16:45	Mussel-Inspired Multifunctional Carboxylic Ester Additives with Super-Robust Lubrication Performances and Super-Long Lubrication Life Under Extreme Conditions Xiaoyang Ma, Jinjin Li Tsinghua University, China	
16:45-17:05	The Influence of Polydiethylsiloxane (PDES) Concentration on The Tribofilm of Chlorophenyl Silicone Oil (CPSO) under High-Temperature Lubrication Yan Meng ¹ , Luo Yue ² , Xiangli Wen ³ , Peng Wei ² , Xue Zhou ² , Jie Cheng ¹ , Pengpeng Bai ² , Qian Zhao ² , Yonggang Meng ² , Yu Tian ² 1. China University of Mining and Technology, China; 2. Tsinghua University, China; 3. Yangzhou University, China	
17:05-17:25	Corrosion and Tribological Properties of Multilayer ta-C/ta-C: Ta Coatings LuLu Li, Takayuki Tokoroyama, Ruixi Zhang, Noritsugu Umehara Nagoya University, Japan	
17:25-17:45	Effect of Chlorine-free Refrigerant Environment on Lubrication Property and Tribofilm Formation on Copper Alloy Surfaces Ryuichi Yoshida ¹ , Tomoko Hirayama ¹ , Naoki Yamashita ¹ , Yoshifumi Yamaguchi ² 1. Kyoto University, Japan; 2. Mitsubishi Electric Corporation, Japan	
17:45-18:05	Mechanochemistry in Lubrication of Molecule only Contain C, H and O Chuke Ouyang, Yonghao Cui, Yu Tian Tsinghua University, China	

Track 5 Biotribology and Biomimetics

September 17, 2024

2F Meeting Room 15

10:10-10:40	KEYNOTE Low Energy Biological Recognition and Biomimetic Anti-interference Technology Zhiwu Han Jilin University, China	Chair Zhongmin Jin
10:40-11:05	INVITED Influence of Neutral and Cationised Phytoglycogen Nanoparticles on Cartilage and Ocular Lubrication Prashant Kumar Sharma ¹ , Nikola Mazarevica ^{1,2} , Ke Ren ¹ , Yong Chen ² 1. University of Groningen, the Netherlands; 2. University of Birmingham, U.K	
11:05-11:25	Mechanical Robustness Hydrogel with Lubrication Commensurate with Articular Cartilage Desheng Liu, Xiaolong Wang, Weimin Liu Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China	
11:25-13:30	Lunch Break	
13:30-14:00	KEYNOTE Biomimetic on High Frictional Pads Design: From Biology Study to Engineering Applications Zhendong Dai Nanjing University of Aeronautics and Astronautics, China	Chair Xiangjun Zhang
14:00-14:20	Frequency Modulation Effect of Fingerprints Mediates The Sensitive Perception Linfeng Wang, Kaixuan Kong, Haodong Wu, Zhiwei Yu, Zhouyi Wang, Jing Tao, Zhendong Dai Nanjing University of Aeronautics and Astronautics, China	
14:20-14:40	Prediction on The Medial Knee Contact Force in Patients with Knee Valgus Using Transfer Learning Approaches Jianjun Zou, Xiaogang Zhang, Yali Zhang, Zhongmin Jin Southwest Jiaotong University, China	
14:40-15:40	Coffee Break	

15:40-16:05	INVITED Biological Membranes and Microcirculation of Organs and Artificial Organs Xiangjun Zhang, Yongqi Shi, ChakHoi Shih, Longsheng Lin, Peiqin Miao Tsinghua University, China	Chair Prashant Kumar Sharma
16:00-16:20	3D-printed PEEK Scaffold Embedded with Uhmwpe Provides Excellent Mechanical Properties, Wear Resistance and Biocompatibility for Small Joint Implant Applications Shenglin Li, Luyao Tang, Jian Song Sun Yat-sen University, China	
16:25-16:45	Biomimetic Artificial Cartilage in A Beagle Dog Model Artificial Joint Application Shan Lu, Liguao Qin Xi'an Jiaotong University, China	
16:45-17:05	Contact Mechanics and Edge Loading of UHMWPE Elevated-rim Liner for Artificial Hip Joints Tao Feng ¹ , Xiaogang Zhang ¹ , Guoxian Zhang ¹ , Qingyun Xie ² , Yali Zhang ¹ , Zhongmin Jin ¹ 1. Southwest Jiaotong University, China; 2. The General Hospital of Western Theater Command of PLA, China	

Track 6 Nanotribology and Superlubricity

September 17, 2024

2F Meeting Room 17

10:10-10:40	KEYNOTE Progress and Challenges in Atomic Layer Manufacturing Linmao Qian Southwest Jiaotong University, China	Chair Jürgen Rühle
10:40-11:10	KEYNOTE Origin of H-DLC Superlubricity Seong H Kim Pennsylvania State University, United States	
11:10-11:30	Establishment and Optimization of Slurry System for Heterogeneous Materials during Advanced Cobalt Interconnects CMP Process Lifei Zhang, Xinchun Lu Tsinghua University, China	
11:30-11:50	Metal Thickness Measurement System with Coaxial Triple-Coil Sensor Based on Eddy-Current Method for Chemical Mechanical Polishing Chengxin Wang ¹ , Tongqing Wang ² , Xinchun Lu ² 1. Fuzhou University, China; 2. Tsinghua University, China	
11:50-12:10	Classification of Material Removal Modes in Chemical Mechanical Polishing Yuan Wu, Liang Jiang, Linmao Qian Southwest Jiaotong University, China	
12:10-13:30	Lunch Break	
13:30-14:00	KEYNOTE Superlubricity of DLC Film, A Perspective of Interfacial Tribochemical Kinetics Tianbao Ma Tsinghua University, China	Chair Linmao Qian
14:00-14:25	INVITED Friction and Wear Mechanism of Graphene-Based Materials at Atomic Scale Lei Chen, Linmao Qian Southwest Jiaotong University, China	
14:25-14:45	The Mechanism and Control of Nanoscale Friction Behavior on Graphene Surface Zhe Chen Zhejiang University, China	
14:40-15:00	Tunable Low Adhesion in Single-Asperity Contact of sp² Nanocrystallited Carbon Film with In-situ TEM Study Xue Fan, Zelong Hu Shenzhen University, China	
15:05-15:25	AFM Studies on Formation and Tribological Properties of Fatty Acid Metal Soaps on Copper Surfaces Naoki Yamashita ¹ , Hinano Egawa ¹ , Tomoko Hirayama ¹ , Taketoshi Minato ² 1. Kyoto University, Japan; 2. Institute for Molecular Science, Japan	
15:25-15:45	Coffee Break	

15:45-16:10	INVITED Electromechanical Properties of Carbon-Based Sliding Interface Ming Ma Tsinghua University, China	Chair Tianbao Ma
16:10-16:30	In-situ Atomic Observation of Tribological Behaviors between Metallic Asperities Dingshun She ^{1,2} , Yang He ³ , Wen Yue ¹ 1. China University of Geosciences (Beijing), China; 2. Zhengzhou Institute, China University of Geosciences (Beijing), China; 3. University of Science and Technology Beijing, China	
16:30-16:50	Energy Harvesting and Sensing at Sliding Interfaces Based on Oil Dielectrics Liang Xu Beijing Institute of Nanoenergy and Nanosystems, China	
16:50-17:10	Phase Transition Structural Superlubricity Bao Jin, Yongyong He Tsinghua University, China	
17:10-17:30	Quantitatively obtain the interface slip length based on colloidal probe atomic force microscope (CP-AFM) techniques Zehui Liu, Liwen Mu, Xiaohua Lu Nanjing Tech University, China	

Track 7 Tribology in New Energy System

September 17, 2024

4F Function Hall 6

10:10-10:40	INVITED Transistor-Inspired Energy Harvesters Hao Wu South China University of Technology, China	Chair Zuankai Wang
11:05-11:25	Liquid Superlubric Triboelectric Nanogenerator Kaiqiang Wang, Jinjin Li Tsinghua University, China	
11:25-11:45	Efficient Friction Energy Recovery and Utilization Based on Tribovoltaic Nanogenerator in Industrial System Jie Cao ^{1,2} , Guanggui Cheng ² , Chi Zhang ¹ , Jianning Ding ² 1. Chinese Academy of Sciences, China; 2. Jiangsu University, China	
11:45-12:05	Freestanding - Mode Tribovoltaic Nanogenerator for Harvesting Sliding and Rotational Mechanical Energy Sicheng Dong, Chi Zhang Beijing Institute of Nanoenergy and Nanosystems, Chinese Academy of Sciences, China	
12:05-13:30	Lunch Break	
13:30-14:00	KEYNOTE Nature-Inspired Interfacial Engineering for Energy Harvesting Zuankai Wang The Hong Kong Polytechnic University, China	Chair Chengkuo Lee
14:00-14:20	The Droplet-Luminescence Excited by Contact Electrification on Polymer Surface Shicai Zhu, Liran Ma Tsinghua University, China	
14:20-14:40	Middle Layer Enhanced Triboelectric Nanogenerator and Its Synergistic Regulation Mechanism of Tribology and Triboelectric Properties Mang Gao, Junliang Yang Central South University, China	
14:40-15:00	Liquid-based Fluorinated Nanogenerator with High Charge Density for Energy Harvesting Hanli Zhang ¹ , Kaiqiang Wang ¹ , Jinjin Li ¹ , Jianfeng Li ¹ , Rui Zhang ¹ , Yelong Zheng ² 1. Tsinghua University, China; 2. Tianjin University, China	
15:00-15:40	Coffee Break	

15:40-16:10	KEYNOTE Triboelectrics as Enabling Technology for Sustained AIoT Sensing Systems Chengkuo Lee National University of Singapore, Singapore	Chair Hao Wu
16:10-16:35	INVITED Triboelectric Spectroscopy for In Situ Chemical Sensing Shiquan Lin Beijing Institute of Technology, China	
16:35-16:55	Boosting the Durability of Triboelectric Nanogenerators Jun Zhao ¹ , Roland Larsson ² , Yijun Shi ² 1.Beijing Institute of Technology, China; 2.Luleå University of Technology, Sweden	
16:55-17:15	Wind Energy Harvesting System Using Polymer Deformation Xiaocheng Sun, Jingshan Zhao Tsinghua University, China	

Track 9 Industrial Tribology and Instruments

September 17, 2024

2F Meeting Room 13

10:10-10:40	KEYNOTE: From Imaging the Trajectory of a Single Asperity to Colour Atomic Force Microscopy, Tip Functionalisation and Assisted Reproductive Technology Hideki Kawakatsu The University of Tokyo, Japan	Chair Jianhua Zhang
10:40-11:00	Autonomous Depth Identification Analysis of Friction Fault of Non-contact Rotary Seal Junjie Lu NingboTech University, China	
11:00-11:20	Acoustic and Haptic - New Challenges in The Automotive & Social Sector Stephan Henzler Stephan Henzler Bechem Lubrication, Germany	
11:20-11:40	An Accurate Measurement Method for Center Oil Film Thickness in High-Speed Roller Bearing Using Ultrasound Jianyun Wang, Le Gu Harbin Institute of Technology, China	
11:40-12:00	Health Monitoring of Cylinder Liner Piston System of Internal Combustion Engine Based on CPA-FM-MEM and Dynamic Concentration Model of Wear Particle Letian Ding, Wei Cao, Jiajun Wu, Yang Yan, Yifan Wang, Rui Su ¹ Xi'an Technological University, China	
12:00-13:30	Coffee Break	
13:30-13:55	INVITED Multi-Scale Conformal Micro/Nano PatternedManufacturing via Colloid Self-AssembleTechnology Yuan Ma Tsinghua University	Chair Hideki Kawakatsu
13:55-14:15	Tribological Properties Optimization of Camshaft Bearings for V6 Diesel Engines Jingjing Zhao, Jinxiang Liu Beijing Institute of Technology, China	
14:15-14:35	Experimental Study on And Prediction of Erosion Performance of High-Pressure Pipeline Involving Fluctuating Tensile Stress Siwei Dai, Jianchun Fan China University of Petroleum-Beijing, China	
14:35-14:55	Effects of Surface Texturing in Applications under Soft Elastohydrodynamic Lubrication Sen Jiang Xi'an Jiaotong University, China	
14:55-15:15	Investigation of Leakage in Rubber Seal-Glass Barrel Interfaces: A Persson Contact Mechanics Approach Ruibin Xu Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, China	

Wednesday, September 18, 2024

Plenary Room		3F Convention Hall	
September 18, 2024			
08:30-09:10	Harmonious Tribo-Interface Enabled by Soft Matters	Feng Zhou Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences	Chair Yongzhen Zhang
09:10-09:50	Fundamental Advances, Impact and Future Perspective of Modelling in Tribology	Daniele Dini Imperial College London	Co-Chair Yu Tian

Track 1 - I Friction and Lubrication

September 18, 2024		3F Function Hall 1	
10:10-10:40	<div>KEYNOTE</div> <div>Measuring Spatial-Temporal Distribution of Contact Stress and Dexterous Grasping</div> <div>Yu Tian</div> <div>Tsinghua University, China</div>	Chair Feng Guo	
10:40-11:05	<div>INVITED</div> <div>Lubrication Condition Monitoring for Bearings Using The Electrical Impedance Method</div> <div>Meng Yao³, Daichi Kosugi¹, Shunsuke Iwase¹, Taisuke Maruyama¹, Satoshi Momozono^{1,2}</div> <div>1. NSK Ltd., Japan; 2. Tokyo Institute of Technology, Japan; 3. NSK (China) Research and Development Co., Ltd., China</div>		
11:05-11:25	<div>A Test Device and Method for Tribological Characteristics of Non-Transparent Material Pairs</div> <div>Haide Yu, Le Gu, Yuxin Zhang</div> <div>Harbin Institute of Technology, China</div>		
11:25-11:45	<div>Study on Tribological Properties and Lubrication Modification and Nondestructive Testing of Steel Wire Rope in Mine Hoist</div> <div>Yuxing Peng, Xiangdong Chang, Kun Huang, Gaofang Wang, Chunming Xu, Qing Zhang</div> <div>China University of Mining and Technology, China</div>		
11:45-13:30	Lunch Break		

13:30-13:55	INVITED Indirect Measurement and Behaviour of Ball Joint Friction Under Real Load Time Series Kai Pfitzer ^{1,2} , Henning Haensel ^{3,4} , Lucas Baumeister ³ , Günther Prokop ¹ 1. Dresden University of Technology, Germany; 2. BMW Group, Germany; 3. Ruhr University Bochum, Germany; 4. IBAF GmbH, Germany	Chair Yuanlin Kou
13:55-14:15	The Decoupling of the Complex Stress State of Rough Interface Based on the Model of Mechanical-Electric Contact Hang Zhao, Wurui Ta, Youhe Zhou Lanzhou University, China	
14:15-14:35	Measurement Method of Superconducting Electromagnetic Device Interface Performance Wurui Ta, Youhe Zhou Lanzhou University, China	
14:35-14:55	Ultrasonic Measurement for Oil Film Thickness Based on Lag Phase Slope Yanbo He, Jianyun Wang, Le Gu Harbin Institute of Technology, China	

Track 1 - II Friction and Lubrication

September 18, 2024		3F Function Hall 2
10:40-11:05	<div>INVITED</div> <div>Tailoring the Tribological Properties of One PEEK-based Composite via High-Quality Nanostructured Transfer Films</div> <div>Shengqin Zhao, Leyu Lin</div> <div>Rheinland-Pfälzische Technische Universität (RPTU)</div> <div>Kaiserslautern-Landau, Germany</div>	Chair Yu Tian
11:05-11:25	<div>Tribological Behavior of 3D Printed Nanofluid Reinforced Photosensitive Self-Lubricating Polymer Materials</div> <div>Guo Du</div> <div>Shandong Laboratory of Advanced Materials and Green Manufacturing at Yantai, China</div>	
11:25-11:45	<div>Prediction of Drag Losses of Wet Clutches Using Machine Learning Algorithms</div> <div>Lukas Pointner-Gabriel</div> <div>Technical University of Munich, Germany</div>	
11:45-13:30	Lunch Break	

Track 1 - III Friction and Lubrication

September 18, 2024		3F Reception Hall
10:10-10:40	KEYNOTE High Temperature Tribology: Current Trends and Future Challenges Prakash Braham Lulea University of Technology, Sweden	Chair Haifeng Wang
10:40-11:05	INVITED Macroscopic Low-Friction via Twinning Assisted Lattice Reconstruction in Magnesium Xiang Chen Nanjing University of Science and Technology, China	
11:05-11:25	Ultra-Low Wear and Friction Enabled by Nanodiamond And Hexagonal Boron Nitride on a-C:H Films Surfaces in Dry Nitrogen Peng Huang, Xinchun Chen, Jianbin Luo Tsinghua University, China	
11:25-11:45	Study on the Running-in Attractor and Its Evolutionary Law Shihui Lang, Hua Zhu, Shirong Ge China University of Mining and Technology, China	
11:45-13:30	Lunch Break	
13:30-13:55	INVITED Wear Properties and Mechanism of Multi-Principal Element Alloys Haifeng Wang Northwestern Polytechnical University, China	Chair Xiang Chen
13:55-14:20	INVITED Effect of Interaction between Oils, Additives and Thickeners on Grease Tribology Performance Jisheng E, Xiaotian Li, Wenbin Kan, Jiaojiao Liang, Ruian Zhang, Xu Zhou Shanghai GKN HUAYU Driveline Systems Co. Ltd, China	
14:20-14:40	A Novel Nanosecond Laser Irradiation Assisted Chemical Mechanical Polishing (CMP) Process for Promoting Material Removal of Single Crystal 4H-SiC Zirui Wang, Yongguang Wang, Haidong He Soochow University, China	
14:40-15:00	Stick-Slip Behavior of Galvanized Automotive Steel and Its Suppression Hao Gao ^{1,2} , Zhao Lijia ² , Wang Qiang ² 1. Shenyang Ligong Universtiy, China; 2. Northeastern University, China	
15:00-15:20	Design, Preparation, and Lubrication Mechanism Study of Lubricating Medium for the Plastic Forming of Titanium Alloys Wei Wang, Zhuang Sun, Yuan Gao, Kuaishe Wang Xi'an University of Architecture and Technology, China	

Track 2 Wear and Fatigue

September 18, 2024

4F Function Hall 3

10:10-10:40	KEYNOTE Research Progress of Polymers in Sliding Friction Pairs Haitao Duan Wuhan Institute of Materials Protection, China	Chair Steven Franklin
10:40-11:05	Analysis and Research on Thermal Accumulation Temperature Field of Friction Surface under Cyclic Action Han Zhai, Chuanwei Zhang, Le Gu, Liqin Wang Harbin Institute of Technology, China	
11:05-11:25	Numerical Wear Simulation and Wear Coefficient Prediction Using Fully Coupled Conjugate Gradient Method Jongwan Yun, Sang-Shin Park Yeungnam University, South Korea	
11:25-11:45	Mechanism and Evolution of Polycrystalline Diamond Compact Back Rake Angles by Experiment and Simulation on Impact Mechanical Response Wen Yue, Yi Li, Dingshun She, Zhenbing Cai, Dezhong Meng China University of Geosciences (Beijing), China	
11:45-12:05	The Damage Behaviors of Wheel/Rail Materials under Complex Environments Haohao Ding Southwest Jiaotong University, China	
12:05-13:30	Lunch Break	
13:30-13:55	INVITED How Does Tribology Contribute to The Development of Healthcare Devices and High-Tech Systems? Steven Franklin Southwest Jiaotong University, China	Chair Haitao Duan
13:55-14:15	Reducing Thermal Gradients and Improving Brake Pad Durability with Architectural Copper Structures Tao An, Anne-Lise Cristol, Vincent Magnier, Ion-Cosmin Gruescu, David Balloy University Lille, France	
14:15-14:35	Study on Fretting Wear Behavior of Various Friction Pair Materials on Titanium Alloys at High Temperatures for Aero-Engine Applications Abdur Razzak Bangladesh, Weihai Xue Institute of Metal Research, Chinese Academy of Science, China	
14:35-14:55	Quantitative Identification of Rope Damage Based on Three-Dimensional Magnetic Leakage Detection and Magnetic Focusing Technology Dagang Wang, Yuan Sun China University of Mining and Technology, China	
14:55-15:15	Regional Morphological Difference and Evolution of Tread Rubber and Its Formation Mechanism under High-Speed Sliding Friction Fei Teng, Jian Wu, Benlong Su, Youshan Wang Harbin institute of technology, China	
15:15-15:35	Study on Fretting Behaviour of Ti-10V-2Fe-3Al Titanium Alloy and 1Cr17Ni3A Alloy Friction Pair and Polymer Coating Protection Yinbo Li, Guoxin Xie Tsinghua University, China	

Track 3 - I Coatings and Surfaces Engineering

September 18, 2024		4F Reception Hall 5
10:10-10:40	KEYNOTE Surface Coating by Self-Assembly of Colloidal Particles Jiadao Wang Tsinghua University, China	Chair Hongxuan Li
10:40-11:05	INVITED A Decoupling Sensing Method of Separating Temperature Component from The Nano-Scale Metal Film Thickness Measurement Output by Using Eddy Current Effect Hongkai Li, Jinlong Wang, Mingshang Chen, Tong Zhang Beijing Institute of Technology, China	
11:05-11:25	Superhydrophobic ER Composite Coating for Excellent Wear and Corrosion Resistance Gaoyu Wang University of Science and Technology Beijing, China	
11:25-11:45	Bioinspired Design of Multifunctional Solid-Repellent Coatings Jing Wang Shanghai Jiao Tong University, China	
11:45-13:30	Lunch Break	
13:30-14:00	KEYNOTE Abnormal Tribological Properties of Graphite and Molybdenum Disulfide at Cryogenic Temperature Hongxuan Li Lanzhou Institute of Chemical physics, China	Chair Hongfei Shang
14:00-14:20	Effect of Laser Shock Peening on Tribological Properties of 55SiMoVA Bearing Steel Dan Zhu, Xia He, Lin Zhong, Guorong Wang, Gang Wei, Wenling Liao Southwest Petroleum University, China	
14:20-14:40	Surface Nitriding and Solid Lubricant Impregnation of Sintered Steels: A Positive Synergic Effect Diego Salvaro Universidade Federal de Santa Catarina, Brazil	
14:40-15:00	Microstructure and Fretting Wear Performance of FeCrAl Coating on Ferritic/Martensitic Steel after Lead-Bismuth Corrosion Zhengyang Li ¹ , Jianguo Yu ² , Zhenbing Cai ² , Yongjun Jiao ¹ 1. Nuclear Power Institute of China, China; 2. Southwest Jiaotong University, China	
15:00-15:20	Effects of Ultrasonic Surface Rolling Processing on the Surface Properties of 4Cr13 Stainless Steel Xiaoshuang Luo China Academy of Machinery Wuhan Research Institute of Materials Protection Co.,Ltd. China	

15:20-15:40	Coffee Break	
15:40-16:05	INVITED Adhesive Contact for Elastic Systems and Structures Based on Johnson-Kendall-Roberts Formalism Feodor M. Borodich ¹ , Xiaoqing Jin ¹ , Nikolay V. Perepelkin ² 1. Chongqing University, China; 2. Leeds Beckett University, UK	Chair Ting Luo
16:05-16:25	Preparation and Characterization of Wear Resistant TiO Layer on Ti Alloy Chenxu Liu Tsinghua University, China	
16:25-16:45	SiC-DLC Composite Coating for Low Friction under Boundary Lubrication in Water Friction System Yuya Kusudo, Motoyuki Murashima, Koshi Adachi Tohoku university, Japan	
16:45-17:05	Fabrication of 3D Porous Oil-Filled Coating Integrated with Oleophilic Mxene Nanoflakes for Exceptional Anti/De-Icing Performance Rui Zhang, Jinjin Li Tsinghua university, China	
17:05-17:25	Wear Resistant, Transparent and Antifouling Diamond Coatings via Electrostatic Self-Assembly Seeding Tao Wang ¹ , Stephan Wang ² 1. Shenzhen Institute of Advanced Technology, China; 2. Shenzhen Technology University, China	
17:25-17:45	Investigation on The Pitting Fatigue Properties of Diamond-like Carbon Film Under Rolling Friction Contacts Kenya Nakayama ¹ , Kaisei Sato ² , Shinya Sasaki ² 1. Graduate School of Tokyo University of Science, Japan; 2. Tokyo University of Science, Japan	

Track 5 Biotribology and Biomimetics

September 18, 2024

2F Meeting Room 15

10:10-10:35	INVITED Fabrication of Lubricating Nanoparticles and Their Application in the Treatment of Early-Stage Osteoarthritis Hongyu Zhang Tsinghua University, China	Chair Shanhua Qian
10:35-10:55	Early-Stage Protein Adsorption Sequence on Blood-Contacting Surfaces Detected by Droplet Microfluidics Haosheng Chen Tsinghua University, China	
10:55-11:15	Investigation of Frictional Characteristics of The Knee Joint of The House Cricket by Pendulum Friction Test Simulating Limb Movements Natsuki Miyaji, Kaisei Sato, Shinya Sasaki Tokyo University of Science, Japan	
11:15-11:35	A Multi-scale Simulation Model for Blood Flow and Oxygen Diffusion in the Artificial Capillary Network Yongqi Shi ¹ , Peiyao Yu ¹ , ChakHoi Shih ¹ , Yi Luo ¹ , Peiqin Miao ¹ , Xiaoying Wang ¹ , Jiyong Song ¹ , Gencong Li ¹ , Xiangjun Zhang ^{1,2} 1. Tsinghua University, China; 2. Zhuhai Clinical Medical College of Jinan University, China	
11:35-13:30	Lunch Break	
13:30-14:00	Simulation and Microfluidic Observation of The Microscale Dynamic Process of Clot Formation at the ECMO Yuxiong Wang, Peiyao Yu, Xiaoying Wang, Xiangjun Zhang Tsinghua University, China	Chair Dong Woog Lee
14:00-14:20	Investigation of Pain Sensation Induced by Friction at The Lower Limb/Prosthetic Socket Interface Xingxing Fang China University of Mining and Technology, China	
14:20-14:40	Effects of Lubricating Squalene on The Early Wear of UHMWPE – Insights from Molecular Dynamics Simulations Qihao Cheng, Ting Zheng, Huichen Zhang Dalian Maritime University, China	
14:40-15:00	A Skin-Inspired Triboelectric Sensor with Normal-Shear Stress Perception Haoran Li, Songtao Hu Shanghai Jiao Tong University, China	

Sept. 18

99

ASIATRIB & CICT2024

15:00-15:40	Coffee Break	
15:40-16:05	INVITED Stick-Slip Friction Triggered Wear in the Articular Cartilage Dong Woog Lee Ulsan National Institute of Science and Technology, Korea	Chair Xiangjun Zhang
16:05-16:25	Development of A New Anisotropic Wear Prediction Model of Articular Cartilage Based on An Experimental Study Dangdang Wang ¹ , Guoxian Zhang ¹ , Zhongmin Jin ^{1,2} , Junyan Li ¹ 1. Southwest Jiaotong University, China; 2. University of Leeds, UK	
16:25-16:45	Multimodal Tactile Sensor Aiming at Smart Space Extravehicular Multi-Finger Operations Based on Finger Tribology Kaixuan Kong, Linfeng Wang, Haodong Wu, Zhengxiang Le, Zhiwei Yu, Zhouyi Wang, Jing Tao, Zhendong Dai Nanjing University of Aeronautics and Astronautics, China	

Track 6 Nanotribology and Superlubricity

September 18, 2024		2F Meeting Room 17
10:10-10:40	KEYNOTE Hydration Lubrication: The Mechanism and Applications Chenhui Zhang Tsinghua University, China	Chair Qunyang Li
10:40-11:05	INVITED Exploring Macroscale Superlubricity in Diamond-Like Carbon Coatings and Ceramics: From Model Testing to Practical Applications Tobias Amann ¹ , Andreas Kailer ¹ , Mathias Herrmann ² , Eveline Zschippang ² , Bernhard Blug ¹ , Stefan Makowski ³ , Volker Weihnacht ³ , Fabian Härtwig ³ , Martin Dienwiebel ¹ , Gianpietro Moras ¹ , Thomas Reichenbach ¹ , Michael Moseler ¹ 1. Fraunhofer Institute for Mechanics of Materials IWM, Germany; 2. Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Germany; 3. Fraunhofer Institute for Material and Beam Technology IWS, Germany	
11:05-11:25	Harnessing Boundary Slip for Achieving Friction Reduction: An Experimental Study on Oleophobic and MoS2 Coatings Mingyu Zhang ¹ , Jing Wang ¹ , Haixin Wang ² , Yang Li ³ , Yong Wan ⁴ 1. Donghua University, China; 2. Ningbo Institute of Materials Technology and Engineering, China; 3. Qingdao Technological University, China; 4. Qilu University of Technology, China	
11:25-11:45	Observing and Modeling the Wear Process of Heterogeneous Interface Xin Tang, Aisheng Song, Tianbao Ma Tsinghua University, China	
11:45-12:05	The Evolution Mechanism of Graphene-Like Structure During Superlubricity Achievement of Si3N4/ta-C Friction Pairs Huajie Tang, Xinchun Chen Tsinghua University, China	
12:05-13:30	Lunch Break	
13:30-14:00	KEYNOTE Ambient Thermo-Superlubricity on Ultra-Thin Metals Qunyang Li Tsinghua University, China	Chair Tobias Amann
14:00-14:20	Research on the Friction and Wear Mechanism in the Electronic Perspective Junhui Sun, Yangyang Lu, Yilong Jiang, Xin Zhang, Linmao Qian Southwest Jiaotong University, China	
14:20-14:40	Modeling and Designing the Electrical Contact of Sliding Interfaces Aisheng Song, Ruoyu Shi, Tianbao Ma, Jianbin Luo Tsinghua University, China	
14:40-15:00	Moiré Pattern Based Interfacial Superlubricity in Two-Dimensional Materials Hongwei Bao Xi'an Jiaotong University, China	

15:00-15:20	In-situ Observation of Orientation-Controlled Atomic-Scale Wear Behavior of Metal Re Yanglin Ma ^{1,2} , Dingshun She ^{1,2} 1. China University of Geosciences (Beijing), China; 2. Zhengzhou Institute, China University of Geosciences (Beijing), China	Chair Tobias Amann
15:20-15:40	Coffee Break	
15:40-16:00	Investigation of The Sustained-Release Properties of Reduced Graphene Oxide Membranes Based on Cation-π Interactions Wei Zhang ¹ , Yijia He ² , Hongwei Zhu ² , Xiao Li ³ , Zucui Zou ¹ , Chaogui Luo ^{3,4} , Jianlie Wei ⁵ , Baoyin Lv ¹ , Duo Zhang ¹ , Ming Zhou ^{1,3,4} 1. Guangxi University of Science and Technology, China; 2. Tsinghua University, China; 3. Guangxi Tsinglube New Material Technology Co., Ltd., China; 4. Guangxi Tsinglube Biotechnology Technology Co., Ltd., China; 5. Guangxi Huanong Chuangke Modern Agricultural Technology Group Co., Ltd, China	Chair Tianyi Han
16:00-16:20	Ethyl Lactate Triggers Macroscopic Superlubricity on Silicon-doped Diamond-like Carbon Film without Corrosion of Friction Pairs Jinyan Chen, Jinjin Li Tsinghua University, China	
16:20-16:40	Phytic Acid-Modified of Black Phosphorus Nanosheets Achieve Ultra-High Load Bearing and Ultra-Fast Running-in Liquid Superlubricity on Engineering Steel Surfaces Shaowen Dong, Jinjin Li, Wei Wang Xi'an University of Architecture and Technology, China	
16:40-17:00	Ultralow-Friction of Hydrogenated Carbon Film at Cryogenic Temperature Induced by Hydrogen Correlated Quantum Effect Weiqi Chen ¹ , Kang Wang ^{1,2} , Tianbao Ma ¹ 1. Tsinghua University, China; 2. Xi'an Modern Chemistry Research Institute, China	

Track 7 Tribology in New Energy System

September 18, 2024		4F Function Hall 6
10:10-10:40	KEYNOTE Dynamical Mechanism for Reaching Ultrahigh Voltages from A Falling Droplet Zhuhua Zhang Nanjing University of Aeronautics and Astronautics, China	Chair Wu Hao
10:40-11:05	INVITED Enhanced Charge Density of Triboelectric Surfaces through The Multi-Physical Field Coupling Strategy Xiaojing Mu Chongqing University, China	
11:05-11:25	Effect of Temperature on Tribology of PTFE Seals in Hydrogen Application Shouyi Yin, Ambrose Taylor, Janet Wong Imperial College London, Britain	
11:25-11:45	Research on Friction and Wear Properties of New Energy Logistics Vehicle Brake Materials under Different Ambient Temperature and Humidity Conditions Lei Ma, Yiding Ou Xihua University, China	
11:45-12:05	Effect of Local High Temperature on Tribovoltaic Effect at Semiconductors Interface Yuhan Yang, Shiquan Lin University of Chinese Academy of Sciences, China	
12:05-13:30	Lunch Break	
13:30-13:55	INVITED Interfacial Design for Flexible Hybrid Electronics Hao Wu Huazhong University of Science and Technology, China	Chair Wei Zhai
13:55-14:15	Numerical and Experimental Investigations on Thermoelastic Hydrodynamic Performance of Planetary Gear Sliding Bearings in Wind Turbine Gearboxes Qi Chen ¹ , Kai Zhang ¹ , Yabin Zhang ^{1,2} , Jie Zhu ^{1,2} , Kai Feng ¹ 1. Hunan University, China; 2. Hunan SUND Technological Corporation, China	
14:15-14:35	Recent Tribological Challenges of Electric Vehicles Mohamed Kamal Ahmed Ali, Yu Qiangliang, Zhou Feng Chinese Academy of Sciences, China	
14:35-14:55	Research on The Effect of Water Contamination on Lubricating Oil Properties In Premixed Hydrogen Engine Dengda Zhu ¹ , Yuya Hirose ¹ , Shinnosuke Higashino ¹ , Yuji Mihara ¹ , Takumi Iwata ¹ , Masakuni Oikawa ¹ , Michiyasu Owashi ² 1. Tokyo City University, Japan; 2. MOTORA, Inc., the United States	

14:55-15:40	Coffee Break	
15:40-16:05	INVITED Robust Conductive Hydrogels for Triboelectric Systems Wei Zhai National University of Singapore, Singapore	Chair Zhuhua Zhang
16:05-16:25	Competitive Mechanism between Interfacial Electric Field and Built-In Electric Field for Silicon-Based Tribovoltaic Effect Likun Gong, Chi Zhang Chinese Academy of Sciences, China	
16:25-16:45	PEG-based Both Mechanically and Electrically Modified Flexible Tribovoltaic Nanogenerator for Human Joint Movement Monitoring Ruifei Luan ^{1,2} , Chi Zhang ^{1,2} 1. Chinese Academy of Sciences, China; 2. University of Chinese Academy of Sciences, China	
16:45-17:05	The Effect of Friction on Bonding in Chemical Reactions Hongwei Gao ^{1,2} , Shiquan Lin ^{1,2} 1. University of Chinese Academy of Sciences, China; 2. Chinese Academy of Sciences, China	

POSTER TIME

Time: 15:20-16:20, September 15-16, 2024
Venue: Poster & Exhibition Hall, 3F

The posters are divided into 4 Groups:

GROUP A	Track 1: Friction and Lubrication Track 5: Biotribology and Biomimetics Track 6: Nanotribology and Superlubricity
GROUP B	Track 2: Wear and Fatigue Track 8: Aerospace and Ocean Tribology Symposium Posters
GROUP C	Track 3: Coatings and Surfaces Engineering Track 9: Industry Tribology and Instruments
GROUP D	Track 4: Tribo-chemistry and Lubricants Track 7: Tribology in New Energy System

Poster List - Group A (Track 1 | Track 5 | Track 6)

Poster ID	Abstract ID	Title
A-01	788	Numerical and Experimental Investigation of Patterned Liquid Film Thickness in the Surface Energy-Directed Assembly Process Guangji Wang, Zhimin Chai, Xinchun Lu Tsinghua University, China
A-02	785	Fabrication of Flexible and Transparent Metal Mesh Electrodes Using Surface Energy-Directed Assembly Process Siqing Yuan, Zhimin Chai, Xinchun Lu Tsinghua University, China
A-03	780	Study on Interface Modification and Its Effect on the Tribology Properties of PTFE/Cu Self-Lubricating Materials Bicong Fu, Lihua Fu, Sanming Du, Yongzhen Zhang, Chaofan Wei Henan University of Science and Technology, China
A-04	751	Tribological Mechanism of Molybdenum Trioxide Nanoparticles Synergized with Water-Based Sulfur-Containing Additives Shuoshuo Chen, Shengmao Zhang Henan University, China
A-05	648	Relation between Bulk Viscoelasticity and Friction of Semi-Crystalline Polymer Using Molecular Dynamics Simulation Yudai Ogawa ¹ , Yuji Higuchi ² , Ryuichi Okamoto ¹ , Hitoshi Washizu ¹ 1. University of Hyogo, Japan; 2. Kyushu University, Japan

A-06	623	A Study on Fully Decoupling Property in Frictional Contact based on Modified Direct Method Xiaoqing Jin, Zhu Kai Chongqing University, China
A-07	534	Investigation of Coarse-Grained Molecular Dynamics Simulation for Nanoindentation of Amorphous Carbon Young Chan Jung, Dae-Eun Kim Yonsei University, Korea
A-08	433	The Seal Performance Transformation of Compliant Foil Gas Seals with Various Microchannels during Instantaneous Start-Stop Xueliang Wang ^{1,3,4} , Zegan Gao ^{1,2} , Junjie Lu ¹ , Wei Zhang ¹ , Leibo Wu ³ , Min Jiang ³ 1. NingboTech University, China; 2. Kunming University of Science and Technology, China; 3. Ningbo Tiangong Fluid Technology Co.,Ltd, China; 4. China University of Mining and Technology, China
A-09	411	Hierarchical Microtextures Enhance the Stability of Friction Reduction Yayong Wang Dalian University of Technology, China
A-10	361	Surface Interface Modification of Synthetic Smectite and Its Properties as Thickener Lei Hao, Lei Wang, Hong Xu, Jinxiang Dong Taiyuan University of Technology, China
A-11	345	Analysis of Frictional Behavior Factors of Lubrication Structure in Graphite Embedded Spherical Contact Friction Pairs Xiang Xu China Three Gorges University, China
A-12	309	Research on the Friction and Wear Performance of a Cr Composite Coating for High-Temperature and High-Speed Mechanical Seals An Liu, Shuangxi Li, Haichao Yang, Renyi Cheng Beijing University of Chemistry Technology, China
A-13	307	Analysis of the Wear Characteriztics of Dynamic Pressure Seals During Start-Up based on 3D Fractal End-Face Characterisation Enzhe Bi, Shuangxi Li, An Liu, Shuhai Zhu Beijing University of Chemistry Technology, China
A-14	298	Analysis of Friction and Wear Performance of Dry Friction Mechanical Seal End Face Weave and Irradiation-Modified HDPE Material Tianhao Zhang, Shuangxi Li, Shihao Fan Beijing University of Chemical Technology, China

A-15	255	Influencing Factors Analysis and Experiment Verification of Friction Coefficient between the End Faces for Mechanical Seal under Gas-Liquid Two-Phase Variable Working Condition Shihao Fan, Shuangxi Li, Tianhao Zhang Beijing University of Chemical Technology, China
A-16	144	Effect of Cr Doping on Mechanical and Tribological Properties of MoN Coatings Yong Cheng, Zhenyu Wang, Zhendong Wang, Jianhaonan Bi, Meiqi Zhang, Peiling Ke, Aiyang Wang Chinese Academy of Sciences, China
A-17	851	Effect of Laser Surface Texture Characteristics on the Interfacial Toughness of Hydrogel Layer on the Titanium Alloy Haiyue Gong, Jianliang Li Nanjing University of Science and Technology, China
A-18	737	Automated High-Throughput Screening of Low-Bioadhesion Hydrogels Wenhui Lu ¹ , Xiaobao Cao ² , Zhike Peng ^{1,3} , Xi Shi ¹ , Songtao Hu ¹ 1. Shanghai Jiao Tong University, China; 2. Guangzhou Laboratory, China; 3. Ningxia University, China
A-19	157	A Superelastic Coating with Bionic Lamellar Structure for Improving Drag Reduction and Wear Resistance Prepared by Laser Directed Energy Deposition Minghao Nie, Zhihui Zhang Jilin University, China
A-20	911	Counterion Distribution in the Stern Layer on Charged Surfaces Wanxing Xu, Tianyi Han, Chenhui Zhang, Jianbin Luo Tsinghua University, China
A-21	207	Molecular Design of Superlubricating Materials based on the Inorganic-Organic Hybrid Structure Lei Liu, Yuhong Liu, Jianbin Luo Tsinghua University, China
A-22	186	Nanofriction Properties of Alkane Molecules on Graphite Surface: Effect of Alkyl Chain Length Zhuolin Wu, Jinjin Li Tsinghua University, China
A-23	1008	Interfacial Charging Performances of Electrode Coated Silicon Nitride in Aqueous Solution for Self-Sensing Composites based on Zeta Potential Investigation Anqi Huang, Ying Liu, Jia Cheng Tsinghua University, China

Poster List - Group B (Track 2 | Track 8 | Symposium)

Poster ID	Abstract ID	Title
B-01	920	Enhancing Triboelectrical Output Performances of Triboelectric Nanogenerators via Lubrication of TiO₂-Doped Oleic Acid at Interface Jiaqi Shao Guangdong Ocean University, China
B-02	841	Research on Energy Capture and State Intelligent Monitoring for Bridge Random Vibration based on Triboelectric Nanogenerator Shiming Liu, Shuo Wang, Tao Zhang, Weiqi Zhang, Xilin Guo, Lixia Meng Shenyang Jianzhu University, China
B-03	800	Bladeless Wind Turbine Triboelectric Nanogenerator for Effectively Harvesting Random Gust Energy Mingkang Zhu, Tinghai Cheng Beijing Institute of Nanoenergy and Nanosystems, China
B-04	1001	Friction and Wear Digital Twin: In-Situ Surface Information Acquisition Haoran Liao, Ying Liu, Hongju Li Tsinghua University, China
B-05	1000	Cloud Maps Highlighting Dynamic Characteristics of Surface Signal to Improve Time-Varying Wear Evaluation Accuracy Hongju Li, Ying Liu, Haoran Liao Tsinghua University, China
B-06	803	Wind Aggregation Enhanced Triboelectric-Electromagnetic Hybrid Generator with Slit Effect Yuqi Wang Chinese Academy of Sciences, China
B-07	755	A Strong, Wear- and Corrosion-Resistant, and Antibacterial Co-30 at.% Cr-5 at.% Ag Ternary Alloy for Medical Implants Feilong Jiang, Fuzeng Ren Southern University of Science and Technology, China
B-08	646	Analysis of Wear in Boundary Lubrication Using Smoothed Particle Hydrodynamics Akinori Fujita ¹ , Natsuko Sugimura ² , Hitoshi Washizu ¹ 1. University of Hyogo, Japan; 2. Kagoshima College, Japan
B-09	522	Investigation of Acoustic Emission under Friction Condition Using Discrete Element Method Jae-Ho Han, Dae-Eun Kim Yonsei University, Korea
B-10	519	Observation of Failure Behavior of Multilayer Coatings Won-Bin Kang, Dae-Eun Kim Yonsei University, Korea

B-11	497	The Influence of Drilling Technology on the Wear Evolution Process of Impregnated Diamond Bits Zhiming Wang, Wucheng Sun, Songcheng Tan, Chengkai Guan, Longchen Duan China University of Geosciences, China
B-12	478	Study on the Erosion and Wear Performance of Fracturing Sliding Sleeve Baffle Ring Structure based on FLUENT-EDEM Coupling Yuhang Zheng, Lin Zhong SouthWest Petroleum University, China
B-13	402	Research on Disc Brake Noise and Control Measures Based on Bidirectional Friction Coupling Vibration-Induced Mechanism Qi Zhu, Jun Xie, Jian Li, Wei Zhang Chongqing Technology and Business University, China
B-14	360	Tribological Characteristics of Rotary Vane Steering Gear Seals under the Oil with Different Abrasive Particle Sizes Jinyang Song, Conglin Dong, Xiuqin Bai, Chengqing Yuan Wuhan University of Technology, China
B-15	251	Friction and Wear Analysis and Life Prediction of Long-Life Reciprocating Spring Energized Seal for Aerospace Application Leli Huang, Shuangxi Li Beijing University of Chemical Technology, China
B-16	26	Simulation Study on Fretting Wear Behavior of High Strength Alloy Steel Induced by Plasma Nitriding and Post-Oxidation Gaofang Wang ¹ , Yuxing Peng ¹ , Magd Abdel Wahab ² 1. China University of Mining and Technology, China; 2. Ghent University, Belgium
B-17	998	The Improved Model of Contact Deep Groove Seals based on Partition Model and JFO Boundary Condition Zhurong Liang, Ying Liu Tsinghua University, China
B-18	653	Study on the Dynamic Characteristics, Friction, and Wear of Constant Gap Air Film Floating Ring Seals Shuhai Zhu, Runmei Ma, Shuangxi Li Beijing University of Chemical Technology, China
B-19	533	Research on an Active Supplementary Oil Supply Technique for Long-Life Lubrication Systems of Space Actuators Shaohua Zhang, Gang Zhou, Ningning Zhou, Tao Qing Beijing Institute of Control Engineering, China
B-20	312	Frictional Wear Characteristics of Magnetic Seals in Aero-Engine Bearing Cavities Renyi Cheng Beijing University of Chemical Technology, China
B-21	109	Study on the Frictional Properties of Sliding Electrical Contact Materials with Low Wear in Space Shumin Zhang ¹ , Jikui Liu ¹ , Xiao Kang ² , Lei Zhang ² 1. Beijing Institute of Control Engineering, China; 2. Central South University, China

Poster List - Group C (Track 3 | Track 9)

Poster ID	Abstract ID	Title
C-01	856	Strengthening Mechanisms of Laser Cladding TiC/FeCoCrNiCu High-Entropy Composite Coatings: Microstructure Evolution and Wear Behaviors Guodong Chen, Xiubo Liu, Feizhi Zhang Central South University of Forestry and Technology, China
C-02	798	Preparation of Epoxy Resin Based Ultra-Low Friction and Anti-Corrosion Composite Coating Zheng Wang, Liguang Qin, Guangneng Dong Xian Jiaotong University, China
C-03	791	All-Solution-Processed Electronics with Sub-Microscale Resolution and Nanoscale Fidelity Fabricated via a Humidity Controlled Surface Energy-Directed Assembly Process Jingwei Zhang, Zhimin Chai Tsinghua University, China
C-04	611	Development of a Human Signal Detection Sensor based on Conductive Film Through Multi-Layer Coating Sungjun Lee, Daehyeon Kim, Changlae Kim Chosun University, Korea
C-05	537	Enhanced Friction and Wear Properties of Dual-Phase Zhong Han, Zhongxiao Han, Zhenbo Wang Chinese Academy of Sciences, China
C-06	506	Design and Build of Layer-By-Layer Heparin Antithrombotic Coat-Ing for Poly(4-methyl-1-pentene) Hollow Fiber Membrane ChakHoi Shih ¹ , Yongqi Shi ¹ , Longsheng Lin ¹ , Yi Luo ¹ , Peiyao Yu ¹ , Xiaoying Wang ¹ , Peiqin Miao ¹ , Jiyong Song ¹ , Gencong Li ² , Xiangjun Zhang ¹ 1. Tsinghua University, China; 2. Zhuhai Clinical Medical College of Jinan University (Zhuhai People's Hospital), China
C-07	482	Rolling Resistance Moment: The Factor That Affects the Motion of Liquid Marbles Sun Yukai Tsinghua University, China
C-08	460	The Development of B/Cr Co-Doped DLC Coating by FCVA Deposition System and Its Tribological Properties at 300 °C Ruixi Zhang ¹ , Takayuki Tokoroyama ¹ , Noritsugu Umehara ¹ , Woo-Young Lee ² , Motoyuki Murashima ³ 1. Nagoya University, Japan; 2. Korea Photonics Technology Institute, Korea; 3. Tohoku University, Japan
C-09	364	Microstructure and Corrosion Erosion Resistance of NiTiAlCrCoN Films with Different Co Contents Hongjuan Yan North China University of Technology, China
C-10	350	Microstructure and Properties of FeCrNiMoSix High-Entropy Alloy Coatings Prepared by Laser Cladding Youci Ruan, Cunhong Yin Guizhou University, China

C-11	339	Tribological Behavior of Duplex-Treated 42CrMoAl Steels by Plasma Nitriding and (CrWAlTiSi)N Nona-Multilayer Coating Yang Li ¹ , Zhou Zelong ¹ , Yongyong He ² 1. Yantai University, China; 2. Tsinghua University, China
C-12	303	Friction and Wear Characteristics of Hard Coating Combination and Its Application in Standing Wave Linear Ultrasonic Motor Yueying Zhu Beijing Institute of Control Engineering, China
C-13	287	Analysis of Interface Damage and Failure Behavior of Solid Lubrication Film under Rolling Contact State Haide Yu, Le Gu, Kun Shu Harbin Institute of Technology, China
C-15	68	Design and Study on the New Friction Interface of Ultrasonic Motor based on Lubricating Coating Guoqing Wang, Gai Zhao Nanjing University of Aeronautics and Astronautics, China
C-16	31	Efficient One-Step Preparation for High-Quality Inconel 625-xAl₂O₃ Composite Coating via Plasma Enhanced High-Velocity Arc Spraying Yunfan Liu ¹ , Haidou Wang ^{1,2} , Guozheng Ma ² , Lina Zhu ¹ 1. China University of Geosciences (Beijing), China; 2. Army Academy of Armored Forces, China
C-17	835	Study on the Effect of Magnetorheological Fluids (MRFs) on the Sealing Performance Yanjuan Zhang, Luo Tianzhou Beijing University of Civil Engineering and Architecture, China
C-18	614	Efficient Water Energy Harvesting Using a Hybrid Nanogenerator Integrating Water Wave and Evaporation-Driven Mechanisms Xiaoliang Li, XiangYu Chen Chinese Academy of Sciences, China
C-19	456	A Coupling Model for Tribodynamic Behavior of Hydro-Viscous Flexible Drive with Consideration of Saucer-Warping Deformation Jianzhong Cui Yancheng Institute of Technology, China
C-20	237	Research on the Friction and Wear Characteristics of PEEK/Stainless Steel under Oil-Seawater Emulsion Medium Runzhou Xu, Yipan Deng, Zhenyao Wang, Yinshui Liu Huazhong University of Science and Technology, China

Poster List - Group D (Track 4 | Track 7)

Poster ID	Abstract ID	Title
D-01	983	Tribological Mechanism of Eco-Friendly Amino Acids Ionic Liquids as Water Lubrication Additives Xuemin Sun ¹ , Xiao Liu ¹ , Meirong Cai ^{1,2} , Feng Zhou ^{1,2} 1. Shandong Laboratory of Advanced Materials and Green Manufacturing at Yantai, China; 2. Chinese Academy of Sciences, China
D-02	980	The Detergency and Tribological Properties of Oil-Miscible Quaternary Ammonium-Based Ionic Liquids: A Novel Potential Multifunctional Lubricant Additives Jian Qin ^{1,3} , Qiang Chen ¹ , Meirong Cai ^{1,2} , Feng Zhou ² 1. Shandong Laboratory of Advanced Materials and Green Manufacturing at Yantai, China; 2. Chinese Academy of Sciences, China; 3. Qingdao University of Technology,
D-03	978	Enabling Ultra-Low Wear and Long-Lived Lubrication by DLC–Supramolecular Gel Composite Lubrication System under Extreme Contact Stress Ao Xie ¹ , Meirong Cai ^{1,2} , Feng Zhou ¹ 1. Chinese Academy of Sciences, China; 2. Shandong Laboratory of Yantai Advanced Materials and Green Manufacturing, China
D-04	809	Thermal Stability and Failure Mechanisms of Organic-Inorganic Hybrid Nanoparticles in Various Polar Media Kun Han, Shengmao Zhang, Changhua Zhou, Yujuan Zhang, Zhijun Zhang Henan University, China
D-05	649	Analysis of Organic Fluorine Compounds Using Molecular Dynamics Simulations Ryuji Hanano ¹ , Takehiro Kobayashi ¹ , Ryuichi Okamoto ¹ , Takeshi Hasegawa ² , Hitoshi Washizu ¹ 1. University of Hyogo, Japan; 2. Kyoto University, Japan
D-06	645	Frictional Properties Analysis of Graphene Oxide in Solvent by Molecular Dynamics Method Takayuki Tomokiyo, Hitoshi Washizu University of Hyogo, Japan
D-07	644	Initial Aggregation of Lithium Soap in Oil: Molecular Dynamics Simulation Yasukaze Nishimura, Ryuichi Okamoto, Hitoshi Washizu University of Hyogo, Japan
D-08	449	Rapid Selection of Environmentally Friendly Layered Alkaline-Earth Metal Phosphates as Solid Lubricants Using Crystallographic Data Xiaosheng Zhang, Hong Xu, Jinxiang Dong Taiyuan University of Technology, China

D-09	164	Application of Artificial Intelligence in Predicting the Lubrication Performance of MoS₂-Al₂O₃ Nanofluid Jiaqi He ¹ , Huijian Li ² , Zihan Guo ³ 1. The Open University of China, China; 2. Shandong Hi-Speed Energy Development Co Ltd, China; 3. Beihang University, China
D-10	976	A High Output Hydrovoltaic Power Generation Device based on the Ionic Rectification Effect Endian Cui, Pengfan Wu, Fayang Wang, Xiaojing Mu Chongqing University, China
D-11	857	TiO₂ Nanoparticles as an Oleic Acid Additive to Improve the Electrical Output Performance of Tribology Nanogenerator Jiaqi Shao, Guoyan Yu, Yixing He, Xianzhang Wang Guangdong Ocean University, China
D-13	629	A Piezo-Tribovoltaic Nanogenerator with Ultrahigh Output Power Density and Dynamic Sensory Functions Siyao Qin, Xiangyu Chen Chinese Academy of Sciences, China
D-14	628	Edge Friction Volt Effect of MOS₂ Xiaoming Jing, Shiquan Lin Beijing Institute of Nanoenergy and Systems, China
D-15	626	Omnidirectional Water Wave Energy Harvesting by Spherical Triboelectric Nanogenerator with Sliced Pizza-Shaped Electrodes Hongxin Hong ¹ , Tianle Chen ¹ , Jianjun Yang ¹ , Yiwen Hu ¹ , Jinteng Hu ¹ , Dongsheng Li ¹ , Farong Liu ¹ , Liqiang Liu ² , Hao Wu ¹ 1. South China University of Technology, China; 2. Tongji University, China
D-16	615	Influence of Edge Effect on the Output of Sliding Freestanding Triboelectric Nanogenerator Shuai Ding, Xiangyu Chen Chinese Academy of Sciences, China
D-17	593	Recent Development in TENGs to Collect Acoustic Energy Siqian Zhou, Shiquan Lin Chinese Academy of Sciences, China
D-18	592	Fabrication of Triboelectric Polymer Films via Repeated Rheological Forging for Ultrahigh Surface Charge Density Zhaoqi Liu, Xiangyu Chen Chinese Academy of Sciences, China

D-19	589	Mass Transfer System of a Large Number of Small Objects based on Conjunction of Triboelectric Nanogenerators and Photo-Responsive Interface Xuanyi Dong, Xiangyu Chen Chinese Academy of Sciences, China
D-20	586	Acid-Doped Pyridine-Based Polybenzimidazole as a Positive Triboelectric Material with Superior Charge Retention Capability Xinglin Tao, Xiangyu Chen Chinese Academy of Sciences, China
D-21	585	Contact Electrification at Diversified Interfaces and Related Applications on Triboelectric Nanogenerator Jun Hu, Shiquan Lin Chinese Academy of Sciences, China
D-23	101	Effect of Temperature on Tribological Properties and Electrification Performance of a Sliding-Mode Triboelectric Nanogenerator with a Patterned Surface Yanqiang Hu Beijing Institute of Control Engineering, China
D-24	625	Transistor-Like and Bionic Energy Harvester for Wireless Coded Transmission Hongxin Hong ¹ , Yiwen Hu ¹ , Tianle Chen ¹ , Jianjun Yang ¹ , Jinteng Hu ¹ , Liqiang Liu ² , Hao Wu ¹ 1. South China University of Technology, China; 2. Tongji University, China

AUTHOR INDEX (Alphabetical order by first names)

Author Name	Page
Abdur Razzak	96
Adam Agocs	77
Adam Novotny	83
Ahad Abdul	51
Ahmed Busnaina	45
Ahmet T Alpas	50
Aisheng Song	101
Aiying Wang	45, 83, 107
Aiying Wang	81
Akihiko Azetsu	57
Akinori Fujita	107
Alberto Alberdi	73
Alois K. Schlarb	58
Amaya Igartua	73
Ambrose Taylor	103
An Liu	106
Ana Aranzabe	73
Ana Maria Fuentes Caparros	83
Anastasiya Yakovenko	43
Andreas Kailer	62, 101
Anne-Lise Cristol	75, 96
Anqi Huang	107
Ao Xie	112
Ardian Morina	45, 63, 79, 84
Ashwin Vazhappilly	42
AZETSU Akihiko	41
Baichuan Leng	68
Baishu Li	74
Bao Jin	89
Baojie Wu	71
Baodan Zhang	61
Baoyin Lv	102
Ben White	47
Benlong Su	43, 96
Bernhard Blug	101
Bicong Fu	105
Bin Lin	50
Bin Zhang	69, 82
Binbin Liu	69

Author Name	Page
Bingnan Wu	43
Binhui Zhang	72
Bo Li	51
Bo Persson	43
Boran Yu	50, 77
Braham Prakash	71
Caixia Zhang	77
Cayetano Espejo	84
ChakHoi Shih	87, 99, 110
Chang Dong	73
Chang Ge	46
Changcheng Bai	64
ChangCheng Bao	69
Changhua Zhou	112
Chang-Lae Kim	110
Chaogui Luo	82, 102
Chao Peng	70
Chao Wang	63
Chao Xiang Chan	84
Chaofan Wei	105
Chaoqun Li	41
Charlotte Besser	77
Chen Xinchun	81
Cheng Zheng	50
Chenghui Gao	71
Chengjiao Yu	41, 79
Chengkai Guan	109
Chengkuo Lee	91
Chenglingzi Yi	84
Chenglong Liu	51
Chenglong Xia	44
Chengqing Yuan	50, 85, 109
Chengxin Wang	88
Chenhui Zhang	46, 48, 73, 75, 76, 81, 84, 101, 107
Chenxing Sheng	46
Chenxu Liu	42, 98
Chi Zhang	68, 90, 104
Chien-Nan Hsiao	45
Chinari Shimura	46

Author Name	Page
Chong Wang	78
Chris Taylor	79
Christian Greiner	43
Chuan-Chieh Wang	46
Chuang Li	53
Chuanwei Zhang	96
Chuke Ouyang	85
Chung Yan Leung	62
Chunming Xu	93
Chuntian Liu	74
Chunxing Gu	41
Chunyu Fu	57
Conglin Dong	109
Congrui Xv	80
Cornelis H. Venner	41
Cunhong Yin	110
Da An	45
Dae-Eun Kim	106, 108
Dae-Hyeon Kim	110
Dae-Jin Kim	82
Dafei Huang	56
Dagang Wang	96
Daichi Kosugi	93
Daisuke Takekawa	84
Dameng Liu	74, 78
Damien Yiyuan Khoo	72
Dan Guo	60, 67
Dan Jia	42, 84
Dan Sun	50, 69, 77, 78
Dan Zhu	97
Dangdang Wang	100
Daniele Dini	46, 54, 93
Danyang Zhao	55
Daoai Wang	67
David Balloy	96
David Fletcher	47
Decai Li	71
Dechao Zhao	83
Dengda Zhu	103

Author Name	Page
Dengyu Liu	59
Desheng Liu	86
Dezhong Meng	80, 96
Diankai Zhang	79
Diego Salvaro	97
Dingshan Liang	58
Dingshun She	89, 96, 102
Dingwei Liu	82
Dong Woog Lee	100
Dong Zhu	68
Dongfeng Diao	64, 82
Dongheng Han	80
Dongmei Liang	61
Dongsheng Huang	77
Dongsheng Li	113
Dongze Wang	79
Duo Zhang	102
Edward Ng	84
Endian Cui	113
Enyu Liu	69
Enzhe Bi	106
Ernst Meyer	74
Eveline Zschippang	101
Fabian Härtwig	101
Fabio Emanuel De Sousa Ferreira	81
Fan Mingjin	46
Fan Zhang	82
Farong Liu	113
Fatma Makni	75
Fayang Wang	113
Fei Guo	72
Fei Teng	43, 96
Fei Zhou	69
Feihu Lin	58
Feilong Jiang	108
Feizhi Zhang	110
Felix Gatti	62
Feng Guo	51, 54, 63, 83
Feng Jiang	45, 63

Author Name	Page
Feng Ming	56
Feng Zhou	62, 63, 93, 112
Feodor M. Borodich	64, 98
Francesco Pagano	73
Francisco J. Profito	54
Fu jian	77
Fuzeng Ren	58, 108
Gai Zhao	43, 111
Gang Wei	44, 54, 97
Gang Zhou	109
Ganghui Jiang	44
Gaofang Wang	79, 93, 109
Gangqiang Cheng	82
Gaoyu Wang	97
Gemma Mendoza	73
Gencong Li	99, 110
Georg Jacobs	41
Gianpietro Moras	101
Guangbin Yang	42
Guanggui Cheng	90
Guangji Wang	57, 105
Guanglin Lan	46
Guangneng Dong	110
Guangzhao Wang	59
Guibin Tan	78
Guiru Du	42
Guiyu Mei	59
Günther Prokop	94
Guo Du	94
Xilin Guo	108
Guocheng Li	54
Guodong Chen	110
Guoqing Wang	111
Guorong Wang	44, 54, 97
Guorui Zhu	59
Guoxian Zhang	87, 100
Guoxin Xie	50, 69, 70, 72, 96
Guoyan Yu	113
Guoze Ren	78
Guozhe Ren	50
Guozheng Ma	61, 72, 111

Author Name	Page
Haibin Zhou	76
Haibo Huang	51
Haibo Zhang	70, 80
Haichao Yang	106
Haide Yu	93, 111
Haidong Chen	70
Haidong He	95
Haidou Wang	61, 111
Haifeng Wang	95
Haihang Wang	64
Haitao Cui	79
Haitao Duan	42, 96
Haixin Wang	101
Haiyang Gu	42
Haiyue Gong	107
Han Zhai	96
Hang Zhao	94
Hanglin Li	62
Hanli Zhang	90
Hao Chen	50
Hao Gao	95
Hao Li	83
Hao Wu	113, 114
Hao Wu	103
Haodong Wu	86, 100
Haohan Zhang	83
Haohao Ding	43, 56, 79, 96
Haolei Dai	78
Haoran Li	99
Haoran Liao	44, 108
Haosheng Chen	47, 99
Haozhe Xu	62
Liang He	53, 70
Yongyong He	55, 61, 89, 111
Hedong Zhang	42, 54
Helmi Attia	58
Hengyu Li	49, 68
Henning Haensel	94
Hideki Kawakatsu	39, 92
Hinano Egawa	88

Author Name	Page
Hironobu NAKANISHI	48
Hironori Shinmori	47
Hiroshi Kinoshita	52
Hiroshi Tani	79
Hiroyuki Kousaka	83
Hiroyuki Tatsumi	84
Hitoshi Washizu	46, 67, 105, 108, 112
Hnegyu Li	68
Hong Wan	46
Hong Xu	106, 112
Hongbai Bai	44
Hongbai Chen	53
Hongbo Zeng	39, 64
Hongbo Zou	50
Hongfei Shang	61
Honghai Zhang	59
Honghao Wang	79
Hongjian Zhang	79
Hongjiang He	47
Hongjuan Yan	110
Hongju Li	44, 108
Hongkai Li	83, 97
Hongli Lu	69
Hongwei Bao	101
Hongwei Gao	104
Hongwei Zhang	41
Hongwei Zhu	102
Hongxia Li	55
Hongxiang Yu	62
Hongxin Hong	113, 114
Hongxuan Li	97
Hongyang Ma	74
Hongyin Li	44
Hongyu Li	84
Hongyu Liang	48
Hongyu Zhang	99, 100
Hpon Eui Jeong	49
Hu Lai	44
Hua Zhu	95
Huahao Tang	46

Author Name	Page
Huajie Tang	101
Huan Liu	66, 78
Huan Zhao	69, 77, 78
Huanian Liu	41
Huanze Xu	69, 78
Huawei Chen	64
Hugh Spikes	42, 46, 54, 62
Hui Chen	59
Hui Liu	75
Huichen Zhang	99
Huijian Li	113
Huixiang Liu	57
Hyun-Joon Kim	82
Ian Sherrington	51
Ion-Cosmin Gruesu	96
Irina G. Goryacheva	75
Irwan Jaafar	84
Itziar Alonso	73
Ivan Krupka	41, 43, 54
J.G. Vilhena	74
Jacob Klein	39, 48
Jae-Ho Han	108
Jakub Karmacek	83
James P. Ewen	46
Janet Wong	42, 46, 54, 62, 72, 103
Janez Kovac	84
Jean Michel Martin	73
Jia Cheng	107
Jiachang Liu	51
Jia-Hong Huang	45
Jiajia Jia	63
Jiajie Kang	61, 72
Jiajun Wu	92
Jiaming Si	77
Jiaming Zhang	53
Jian Li	42, 109
Jian Qin	112
Jian Song	87
Jian Wu	96
Jian Yu	79

Author Name	Page
Jian Zhou	45
Jianbin Luo	50, 67, 70, 78, 95, 101, 107
Jianchun Fan	92
Jianfang Liu	84
Jianfeng Li	90
Jiang Liang	67
Jianguo Qian	69
Jianguo Yu	97
Jianhaonan Bi	107
Jianhui Li	78
Jianing Xu	47
Jianjun Yang	113, 114
Jianjun Zou	86
Jianliang Li	107
JianMing Wen	69
JianPing Li	69
Jianyun Wang	92, 94
Jianzhong Cui	111
Jiaojiao Liang	95
Jiaqi He	113
Jiaqi Shao	108, 113
Jiaqi Wu	58
Jiaxin Ye	44
Jiaxu Zhang	73
Jiaying Zhang	62
Jiayun Liu	69
Jibin Liu	58
Jie Cao	90
Jie Cheng	60
Jie Jin	66
Jie Wang	64
Jie Zhang	42, 46, 54, 62
Jie Zhu	103
Jiedong Deng	45
Jihao Han	80
JiJie Ma	69
Jikui Liu	109
Jimin Xu	50

Author Name	Page
Jin Yang	68
Jinbo Jiang	51
Jinchi Hou	54
Jinfu Li	78
Jing Ni	83
Jing Tao	86, 100
Jing Wang	41, 77, 97
Jing Yu	48
Jingjing Zhao	92
Jingshan Zhao	91
Jingwei Zhang	60, 110
Jingyu Hou	41
Jinhui Nie	67
Jinjin Li	66, 85, 90, 98, 102, 107
Jinlong Wang	97
Jinming Chen	64
Jinran Li	70
Jinteng Hu	113, 114
Jingwei Gao	82
Jinxiang Dong	106, 112
Jinxiang Liu	92
Jinyan Chen	102
Jinyang Song	109
Jionglin Zhu	61
Jiping Zhang	84
Jiqiang Wu	58
Jiri Nohava	83
Jisheng E	95
Jiusheng Li	42
Jiyong Song	99, 110
Jiyun Li	51
Johannes Laurin Hörmann	42
Joichi Sugimura	44
Jose Daniel Biasoli de Mello	54, 83
Ju Shu	84
Juhan Lin	64
Julia Bartenstein	46
Julian Röder	41
Jun Dong	68
Jun Guo	56
Jun Hu	114

Author Name	Page
Jun Xiao	72
Jun Xie	109
Jun Zhao	91
Junhui Sun	101
Junichi Uchida	65
Junjie Lu	50, 92
Junjie Xiong	60
Junliang Yang	90
Junming Chen	55
Junqin Shi	85
Junyan Li	100
Junyan Zhang	69
Jürgen Rühle	66
Kai Feng	103
Kai He	53
Kai Sun	70
Kai Wang	43, 81
Kai Zhang	103
kaidier Kaidier	81
Kaikui Zheng	71
Kaiqiang Wang	90
Kaisei Sato	59, 99
Kaixiong Gao	69
Kaixuan Kong	86, 100
Kaiyi Huang	50
Kan Deng	70
Kang Wang	102
Karsten Stahl	41, 42
Kartik Pondicherry	77
Kate Tomlinson	47
Kazim Yildirimli	47
Kazumi Sakai	53
Kazushige Matsubara	84
Kazuya Kuriyagawa	83
Ke He	45, 67, 70, 72
Ke Li	85
Ke Ren	86
Keao Qi	70
Kefei Miao	57

Author Name	Page
Keiichi Narita	84
Kenichi Shibasaki	51
Kenji Fukuzawa	42
Kensei Yoshimachi	80
Kento Mimura	48
Kento Sugawara	57
Kenya Nakayama	98
Keying Xiao	70
Kian Kun Yap	72
Kosar Khajeh	46
Koshi Adachi	42, 48, 60, 82, 83, 98
Kuaishe Wang	95
Kun Han	63, 112
Kun Huang	77, 93
Kun Liu	44, 50
Kun SHU	58, 111
Kunpeng Wang	66
Kunyang Fan	59
Laigui Yu	63
Lars Pastewka	42
Le Gu	45, 57, 92, 93, 94, 96, 111
Lehmann Benjamin	41
Lei Chen	44, 88
Lei Hao	106
Lei Liu	107
Lei Ma	103
Lei Wang	106
Lei Zhang	109
Leibo Wu	106
Lele Huang	109
Letian Ding	80, 92
Leyang Dai	46
Leyu Lin	75, 94
Li Ji	48
Li Kang	59
Li Xiang	64
Li Yang	70
Liang Deng	71
Liang Jiang	88

Author Name	Page
Liang Xu	89
Liangbin Guo	56
Liangyu Han	50
Lianpeng Bai	77
Lifei Zhang	88
Liguo Qin	87, 110
Lihua Fu	105
Likun Gong	104
Liming Teng	51
Lin Sun	48
Lin Zhang	50, 70, 72
Lin Zhong	44, 54, 61, 97, 109
Lina Zhang	67
Lina Zhu	70, 111
Linfeng Wang	86, 100
Lingtong Sun	41
Linlin Duan	42
Linmao Qian	44, 67, 73, 88, 101
Linqing Bai	55, 76
Liqiang Liu	113, 114
Liqin Wang	58, 96
Liran Ma	69, 70, 73, 90
Litian Hu	63
Liwen Mu	92
Long Wang	85
Long Wei	51
Longchen Duan	109
Longsheng Lin	87, 110
Longxiang Yu	44
Lu Junjie	64
Lu Yan	69
Luyi Sun	82
Lucas Baumeister	94
Lukas Pointner-Gabriel	94
LuLu Li	85
Luo Jianbin	81
Luo Tianzhou	111
Luo Yue	85
Luyao Tang	87
Magd Abdel Wahab	79, 109
Makoto Kano	56

Author Name	Page
Manfang Tang	82
Manfu Zhu	70
Mang Gao	90
Manqiang Liu	48
Maoda Zhang	69
Marc Masen	72
Marcella Frauscher	77
Maria Isabel De Barros Bouchet	84
Marian Noack	62
Martin Dienwiebel	101
Martin Hartl	41, 43, 54
Masaki Tsukamoto	54
Masakuni Oikawa	56, 57, 103
Masataka Uchiyama	83
Masaya Fukuda	56
Masayuki Ochiai	41, 57
Mathias Herrmann	101
Mattheüs Lucassen	41
Max Marian	52
Maziar Ramezani	47
Meiqi Zhang	107
Meirong Cai	62, 63, 84, 112
Meirong Yi	75
Meironng Cai	112
Melinda Bullaro	72
Meng Lixia	108
Meng Yao	93, 94
Mengjia Zhang	77
Michael Moseler	101
Michiyasu Owashi	103
Milan Omasta	43, 54, 55, 56
Min Jiang	106
Min Yu	71
Minfeng Wang	70
Minfeng Yu	51
Ming Ju	68
Ming Liu	61, 68
Ming Ma	48, 51, 66, 67, 89
Ming Qiu	53
Ming Yi	84
Ming Zhou	82, 102
Mingbo Zhao	73
Minghao Nie	107

Author Name	Page
Minghui Hao	64
Minghui Lang	85
Mingkang Zhu	108
Mingshang Chen	97
Mingyu Zhang	101
Mingze Yan	45
Minhao Zhu	58, 59, 61
Min-hao Zhu	58
Minjie Wang	55
Mitjan Kalin	75, 84
Mohamed Kamal Ahmed Ali	103
Mohd Fadzli Bin Abdollah	40
Motoyuki Murashima	42, 60, 80, 83, 98, 110
Mouna Baklouti	75
Nan Wang	44
Nan Xu	45, 79
Naohiro Matsumoto	52
Naoki Azuma	42
Naoki Yamashita	42, 48, 85, 88
Natsuki Miyaji	99
Natsuko Sugimura	108
Natsuo Horiba	83
Nesrine Hentati	75
Nian Yin	45, 52, 67, 70, 72
Nicholas Spencer	73
Nicole Dörr	77
Nikil Kapur	79
Nikola Mazarevica	86
Nikolay V. Perepelkin	98
Ning Li	47
Ning Wu	45, 61
Ningmeng Chen	43
Ningning Song	42, 63
Ningning Zhou	109
Nora Kind	50
Norifumi Miyanaga	53
Norihiro Kimoto	80
Noritsugu Umehara	40, 65, 85, 110
Norman Baltes	62
Oliver Koch	71, 72
Pan Dou	71
Patricia Casla	73
Patrick Beau	50

Author Name	Page
Patrick Wong	51
Paul Staudinger	77
Pavel Rohan	83
Pawel Podsiadlo	40
Peiling Ke	81, 107
Peiqin Miao	87, 89, 110
Peiyao Yu	99, 110
Peng Guo	81, 82
Peng Huang	95
Peng Wei	80, 85
Peng Yue	63
Pengfan Wu	113
Pengfei Wang	49, 64
Pengpeng Bai	85
Petr Sperka	41, 54
Petra Jan	75
Pingping Yao	76
Pingyu Zhang	63
Prashant K. Sharma	65, 86
Pu Li	70
Qi Chen	76, 103
Qi Zhu	109
Qian Cheng	64
Qian Jia	74
Qian Zhao	85
Qiang Chen	84, 112
Qiang Da	61
Qiang Lin	43, 56, 79
Qianzhi Wang	69
Qihao Cheng	99
Qihua Wang	75, 80
Qin Zhou	44
Qing Zhang	93
Qinghua Zhou	70
Qingquan Liu	59
Qingyuan Yu	81
Qingyun Xie	87
Qinkai Han	71
Qinwei Wang	44
Qiyue Liu	43, 56, 79
Qunyang Li	101
Radovan Galas	43
Rende Chen	81

Author Name	Page
Renguo Lu	79
Renyi Cheng	106, 09
Renyun Zhang	38, 49
Reo Miwa	53
Riadh Elleuch	75
Roger Lewis	43, 47
Roland Larsson	91
Roman Nevshupa	84
Rongrong Zhang	84
Rosa M. Espinosa-Marzal	66
Ruby Kempka	47
Rui Dong	46, 62
Rui Han	74
Rui Li	60
Rui Su	80, 92
Rui Zhang	57, 90, 98
Ruian Zhang	95
Ruibin Xu	92
Ruifei Luan	104
Ruilin Wang	51
Ruiqi Zhao	48
Ruixi Zhang	65, 85, 110
Runmei Ma	70, 109
Runzhou Xu	111
Ruoyu Shi	101
Ryota Ishii	53
Ryotaro Ohashi	59
Ryuichi Okamoto	46, 105, 112
Ryuichi Yoshida	85
Ryuji Hanano	112
Sang-Hoon Lee	82
Sanming Du	105
Satoshi Momozono	93
Sawae Yoshinori	47
Seanghai Hor	54
Seido Yarimitsu	47
Sen Jiang	92
Seong H. Kim	88
Sergei Glavatskih	51
Serina Tanaka	52
Shan Lu	87
Shanhua Qian	47, 99
Shaofeng Xu	64

Author Name	Page
Shaogan Ye	57
Shaohua Zhang	109
Shaoli Jiang	42
Shaomeng Li	79
Shaowei Feng	69
Shaowen Dong	102
Sheng Yang	54
Shenglin Li	87
Shengmao Zhang	42, 63, 105, 112
Shengpeng Zhan	50
Shengqin Zhao	94
Shengyu Hu	68
Shengzan Zhang	59
Shi Bin	74
Shicai Zhu	90
Shihao Fan	106, 107
Shihong Chen	78
Shihui Lang	95
Shijin Wang	51
Shiming Liu	108
Shinji Koganezawa	79
Shinnosuke Higashino	103
Shintaro Itoh	42
Shinya Sasaki	46, 52, 59, 63, 84, 98, 99
Shiqi Cheng	64
Shiquan Lin	91, 103, 104, 113, 114
Shirong Ge	39, 40, 60, 95
Shizhang Liu	82
Shohei Kawada	79
Shota Inoue	83
Shoujun Zhao	57
Shouyi Yin	103
Shuai Ding	113
Shuai Wang	69
Shuai Yan	50
Shuaifang Wen	50, 77, 78
Shuaishuai Wei	58
Shuaiyu Pang	70
Shuang Wang	77
Shuangcheng Yu	41, 79
Shuangxi Li	59, 70, 106, 107, 109
Shuanhong Ma	47
Shuhai Zhu	106, 109

Author Name	Page
Shuling Zhang	83
Shumin Zhang	109
Shunichi Tajima	41
Shunki BOKU	41
Shunsuke Iwase	93
Shunsuke Nakamizo	53
Shuo Liu	56
Shuoshuo Chen	105
Shuowen Zhang	73
Shusuke Hoshino	56
Shuxin Li	44
Shuyan Yang	62
Shuyue Zhang	43, 56
Sicheng Dong	90
Sicheng Yang	84
Silong Zhang	74
Simon Graf	71
Simon Skurka	43
Siqi Guo	69
Siqi Liu	59
Siqian Zhou	113
Siqing Yuan	54, 105
Siwei Dai	92
Siyao Qin	113
Siyuan Lou	71
Song Fuzhi	63
Song Wang	71
Song Xiao	61
Song Yuan	52
Songcheng Tan	109
Songkai Liu	45, 50
Songtao Hu	99, 107
Sophie Loehle	84
Stanislav N. Gorb	64
Stefan Hofmann	41, 42
Stefan Makowski	101
Stefan Reh	50
Stephan Henzler	92
Stephan Wang	98
Steven Franklin	96
Sudesh Singh	76
Suhaib Ardah	54
Sujeet Sinha	40

Author Name	Page
Sukanta Bhowmick	50
Sun Yukai	110
Sung-Jun Lee	110
Suyue Zhang	79
Taisuke Maruyama	93
Takayuki Tokoroyama	65, 85, 110
Takayuki Tomokiyo	112
Takayuki Yorozu	65
Takehiro Kobayashi	112
Takehiro Morita	47
Takeshi Hasegawa	112
Taketoshi Minato	88
Takumi Iwata	56, 57, 103
Takumi Sato	47
Tan Xinfeng	67
Tangshengjie Wei	44
Tao An	96
Tao Feng	87
Tao Qing	109
Tao Wang	98
Tao Wu	76
Tao Yang	80
Tao Zhang	59
Tao Zhang	108
Tatsuki Tamagawa	83
Tenglong Huang	83
Theo Yamana	60
Thomas Decker	41
Thomas Lohner	41, 42
Thomas Reichenbach	101
Tian Bingyu	46
Tian Qiu	63
Tianbao Ma	73, 88, 101, 102
Tiancheng Wang	61
Tianhao Zhang	106, 107
Tianle Chen	113, 114
Tianmin Shao	40, 61
Tianming Ren	56
Tiantian He	44
Tianyi Han	48, 73, 107
Timm Jakobs	41
Ting Dai	60
Ting Luo	60

Author Name	Page
Ting Zheng	99
Tinghai Cheng	49, 68, 108
Tingmei Wang	80
Tjelvar S. G. Olsson	42
Tobias Amann	62, 85, 101
Tomoko Hirayama	42, 48, 62, 85, 88
Tong Zhang	97
Tonghai Wu	71
Tongqing Wang	72, 88
Tongtong Yu	67
Toru Izumi	53
Tsai-Fu Chung	45
Tuyuan Yin	77
Valentin Popov	52
Venner Kees	41
Vincent Ang	84
Vincent Magnier	96
Volker Weihnacht	101
Wang Qiang	95
Wang Qihua	63
Wang Shipeng	44
Wang Shuo	108
Wang Tingmei	63
Wang Xing	79
Wang Zixi	44
Wanxing Xu	75, 107
Wataru Matsuda	52
Wei Cao	66
Wei Cao	80, 92
Wei Dasheng	77
Wei Fan	59
Wei Shi	44
Wei Song	63
Wei Song	66
Wei Sun	44
Wei Tan	59
Wei Tang	64
Wei Wang	95, 102
Wei Wu	51
Wei Yu	53
Wei Zhai	104
Wei Zhang	106
Wei Zhang	102

Author Name	Page
Wei Zhang	109
Weifeng Huang	77
Weihua Cao	75
Weijia Feng	67
Weimin Liu	62
Weiqi Chen	102
Weiqiang Zhang	49
Weixi Huang	70
Wen Yue	80, 89, 96
Wenbin Kan	95
Wenbin Ma	82
Wenchao Li	71
Wenfeng Xu	77, 78
Wenhu Xu	75
Wenhuang Jiang	59
Wenhui Lu	107
Wenjian Wang	43, 56, 79
Wenjie Pei	59
Wenjing Hu	42
Wenjun Jiang	82
Wenli Deng	81
Wenling Liao	97
Wenxiao Li	47
Wenzhong Wang	41, 52, 53, 69, 70
Will Skipper	47
Won-Bin Kang	108
Woo-Young Lee	110
Wucheng Sun	109
Wuge Briscoe	46
Wurui Ta	43, 56, 94
Xavier Banquy	48, 66
Xi Shi	107
Xi Zhou	53
Xia He	97
Xia Zhang	48, 62
Xianbin Hou	46
Xianchun Jiang	81
Xiang Chen	44
Xiang Chen	95
Xiang Xu	106
Xiang Zhao	72
Xiangdong Chang	71, 93
Xiangdong Yang	83

Author Name	Page
Xianghui Meng	57
Xiangjun Zhang	87, 99, 110
Xiangkai Meng	51
Xiangli Wen	85
Xianglin Li	46
Xiangqiong Zeng	62, 64
Xiangyu Chen	111, 113, 114
Xiangyu Zuo	62
Xianqiang Pei	80
Xianzhang Wang	113
Xiao Kang	109
Xiao Li	102
Xiao Liu	63, 112
Xiao Yang	75
Xiaoying Wang	99, 110
Xiaobao Cao	107
Xiaobo Fan	55
Xiaobo Wang	68
Xiaocheng Sun	91
Xiaochuan Ma	59
Xiaoduo Zhao	47
Xiaogang Zhang	86, 87
Xiaohang Luo	47
Xiaohua Lu	89
Xiaohui Lu	68
Xiaohui Tuo	44
Xiaojing Mu	103, 113
Xiaojun Liu	44
Xiaoliang Li	111
Xiaolong Wang	64, 76, 86
Xiaolong Wu	44
Xiaoming Jing	113
Xiaoqing Jin	64, 98, 106
Xiaosheng Zhang	112
Xiaoshuang Luo	98
Xiaosong Zhang	68
Xiaotian Li	95
Xiaowei Zhang	68
Xiaowu Luo	70
Xiaoxiao Dong	47
Xiaoyang Ma	85
Xiaoying Wang	99, 110
XIn Guo	68

Author Name	Page
Xin Tang	101
Xin Wang	52
Xin Wei	44
Xin Zhang	101
XinChun Chen	60, 74, 76, 81, 82, 95, 101
Xinchun Lu	52, 57, 60, 72, 88, 105
Xing Huang	78
Xing Wang	59, 76
Xin-Gang Wang	62
Xinghua Ma	83
Xinglin Li	51
Xinglin Tao	114
Xingxing Fang	99
Xingyu Chen	54
Xinle Yao	76
Xinming Li	51, 53
Xinni Zhao	59
Xinqi Han	44
Xinxin Meng	51
Xinxin Song	56
Xiqun lu	46, 53
Xiubo Liu	76, 110
Xiuheng Zhang	79
Xiujiang Shi	53
Xiuqin Bai	109
Xiuyu Chen	82
Xiyue Lin	77
Xu Fan	46
Xu Yuxuan	79
Xu Zhou	95
Xuan Ma	46
Xuan Mao	71
Xuan Qiu	57
Xuanyi Dong	114
Xudong Peng	51
Xue Fan	82, 88
Xue Mi	58
Xue Wang	68
Xue Weihai	96
Xue Zhou	85
Xuechao Song	42
Xueliang Wang	106
Xuemin Sun	112

Author Name	Page
Xuhui Sun	60
Ya Li	82
Yabin Zhang	103
Yali Zhang	86, 87
Yalong Li	82
Yan Feng	53
Yan Li	47, 100
Yan Lu	53
Yan Meng	85
Yan Wang	59, 65, 80, 84
Yanan Meng	45
Yanbo He	94
Yanfang Dong	53
Yang He	89
Yang Li	101, 111
Yang Song	83
Yang Wang	44, 46, 79, 113
Yang Yan	75, 92
Yang Yu	68
Yanglin Ma	102
Yangqin Liu	44
Yangyang Lu	101
Yanhua Jiang	46
Yanjuan Zhang	111
Yannick Desplanques	75
Yanqiang Hu	114
Yanyan Bai	46
Yaoyun Zhang	84
Yasukaze Nishimura	112
Yating Huang	65
Yating Liu	69
Yayong Wang	106
Ye Wang	64
Ye Yang	68, 114
Yelong Zheng	90
Yi Li	82
Yi Li	96
Yi Luo	99, 110
Yi Zhang	50
Yi Zhu	57
Yiding Ou	103
Yifan Dong	60
Yifan Wang	80, 92

Author Name	Page
Yifan Wu	53
Yifeng Mao	57
Yijia He	102
Yijun Shi	91
YiLi Hu	69
Yilong Jiang	101
Yilong Ren	69
Yinbo Li	96
Ying Li	69
Ying Liu	44, 67, 72, 107, 108, 109
Yingxu Lin	56
Ying Yin	54
YingTing Wang	69
Yingying Guo	76
Yinhui Wang	81
Yinshui Liu	81, 111
Yintong Sun	57
Yipan Deng	111
Yiqun Feng	45
Yiren Gao	55
Yisa Wu	77
yitian peng	74
Yiwen Hu	113, 114
Yixiao Yang	69
Yixing He	113
Yoji Sunagawa	53
Yong Chen	65, 86
Yong Cheng	107
Yong Wan	101
Yongbao Wei	65
Yongfeng Bu	48
Yonggang Meng	39, 42, 52, 83, 85
Yongguang Wang	95
Yonghao Cui	85
Yongjun Jiao	97
Yongming Yao	49
Yongqi Shi	87, 99, 110
Yongqiang Lin	59
Yongqiang Wang	63
Yongyong He	61, 89
Yongzhen Zhang	44, 93, 105
Yoshifumi Yamaguchi	85
Yoshihiro ITO	48

Author Name	Page
Yoshinori Sawae	47
Yoshiyuki Sugai	152
Youci Ruan	110
Youhe Zhou	43, 56, 94
Young Chan Jung	106
Youshan Wang	43, 96
Youxi Lin	51, 71
Yu Qiangliang	103
Yu Tian	39, 46, 85, 93, 94
Yuan Gao	95
Yuan Li	77
Yuan Liu	73
Yuan Ma	92
Yuan Sun	96
Yuan Wu	88, 109
Yuanjing Dai	46
Yudai Ogawa	105
Yuemei Cen	64
Yueying Zhu	111
Yuhan Yang	103
Yuhang Zheng	109
Yuhong Liu	107
Yuji Higuchi	105
Yuji Mihara	56, 57, 103
Yujie Zhao	65
Yujin Wang	78
Yujuan Zhang	42, 63, 112
Yukang Yuan	82
Yuki Kawamoto	57
Yukun Wei	69
Yulei Yang	50
Yuli Li	56
Yuling Lu	45
Yulong Li	43, 55
Yumei Guo	62
Yun Long	84
Yun Zhao	42, 111
Yunfan Liu	111
Yunfei Chen	66
Yunfei Di	44
Yunfei Fei	53
Yunpeng Wei	80
Yunze Li	42

Author Name	Page
Yuqi Wang	108
Yushan Chen	67
Yusuke Ito	65
Yuting Feng	56
Yuting Guo	42
Yuxi Song	42
Yuxiao Zhao	58
Yuxin Chen	82
Yuxin Zhang	57, 93
Yuxing Peng	45, 71, 77, 79, 93, 109
Yuxiong Wang	99
Yuxuan Wang	70
Yuxuan Xu	76
Yuya Hirose	103
Yuya Kusudo	98
Yuying Cao	68
Yuzhu Guo	80
Zaixiu Yang	69, 70
Zechao Di	77
ZeGan Gao	106
Zehui Liu	89
Zejun Sun	78
Zelong Hu	82, 88
Zelong Zhou	111
Zemin Yang	78
Zenghui Yang	75
Zesheng Huang	70
Zhancheng Zhang	80
Zhang Jianhua	56
Zhang Tao	108
Zhang Weiqi	108
Zhao Lijia	95
Zhao Liu	74
Zhaogang Jing	54
Zhaoqi Liu	113
Zhaoran Zhu	46
Zhaoyang Guo	42
Zhe Chen	88
Zhehao Zhang	61
Zhen LI	45, 58, 67, 70, 72
Zhenbing Cai	96,97
Zhenbo Wang	110
Zhendong Dai	86, 100

Author Name	Page
Zhendong Wang	107
Zheng Wang	110
Zhengxiang Le	100
Zhengyang Li	97
Zhenshun Li	60
Zhenyang Wang	72
Zhenyao Wang	111
Zhenyu Wang	107
Zhenyu Zhang	81
Zhenyuan Gou	80
Zhi Xu	66
Zhi Zhang	68
Zhichao Gong	70
Zhifeng Liu	77
Zhifeng Zhou	69
Zhigang Liu	46
Zhihan Fan	53
Zhihua Pang	65
Zhihui Liu	44
Zhihui Zhang	107
Zhijun Zhang	112
Zhike Peng	107
Zhimin Chai	54, 57, 60, 105, 110
Zhiming Wang	109
Zhinan Zhang	45, 50, 67, 70, 72
Zhiqiang Ai	46
Zhiwei Guo	50
Zhiwei Xu	59
Zhiwei Yu	86, 100
Zhiwu Han	86
Zhixuan He	50
Zhiying Ren	44, 79
Zhiying Wei	70
Zhizhen Jiang	64
Zhong Han	110
Zhong Lin Wang	68
ZhongHua Zhang	69
Zhongmin Jin	86, 87, 100
Zhongrong Zhou	40, 56
Zhongxiao Han	110
Zhou Feng	103
Zhou Haibin	79
Zhouyi Wang	86, 100

Author Name	Page
Zhu Kai	106
Zhuan Li	75
Zhuang Sun	95
Zhuang Wang	77
Zhuojun Chen	74
Zhuolin Wu	107
Zhurong Liang	109
Zibo Liu	78
Zibo Yan	53
Zihan Guo	113
Zihao Huang	44
Zihao Yuan	59
Zing Lee	47
Zirui Wang	95
Zishuai Wu	45, 67, 70, 72
Ziyi Zhou	44
Ziying Li	54
Zonglong Gao	75
Zucai Zou	102
Zuankai Wang	90
Zulfiqar Khan	81
Zumin Wu	50

SPONSOR & EXHIBITION

SPONSOR LIST

DIAMOND SPONSORS



GOLD SPONSORS



SILVER SPONSORS



BRONZE SPONSORS



CONFERENCE JOURNALS



3F Poster & Exhibition Floor Plan

131

ASIATRIB & CICT2024



EXHIBITOR LIST

132

ASIATRIB & CICT2024

Booth No.	Exhibitor
A01	Super Lubricity Technology(Foshan)Co., Ltd.
A02	Hwatsing Technology Co.,Ltd.
B01	KunLun Lubricating
B02	Qingdao Lubemater Lubrication Materials Technology Co., Ltd.
B03	Sinotest Equipment Co.,Ltd.
B04	Shanghai University
B05	Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences
C01	Beijing Qinghan Medical Technology Co., LTD
C02	Luoyang Bearing Research Institute Co., Ltd.
C03	Grease Branch (North-East Branch), Sinopec Lubricant Co., Ltd.
C04	Nanjing Bio-inspired Intelligence Technology Co., Ltd.
C05	Laboratory of Tribology and Surface Engineering, Qingdao University of Technology
C06	Beijing Pule Technology Co.,Ltd
C07	SUZHOU NANOMATERIAL CO., LTD
C08	Bechem Lubrication Technology (China) Co., Ltd
C09	Luoyang Bearing Group Co., LTD
C10	Jinan Yihua Friction Testing Technology Co., Ltd
C11	NANTONG SK SKIKO CO.,LTD
C12	Shen Zhen Hua Sheng Process Intensification Technology Co., LTD
C13	Anton Paar (Shanghai) Trading Co., Ltd.
C14	Jinan Chenda Testing Machine Manufacturing Co., Ltd
C15	Lanzhou Huahui Instrument Technology Co., Ltd.
C16	Rtec-Instruments, Inc
C17	Universal (Hong Kong) Technology Co.,Ltd.
C18	AMT (China) Co., Ltd.
D01	Friction
D02	MDPI - Academic Open Access Publishing since 1996
D03	SURFACE TECHNOLOGY
D04	Biosurface and Biotribology

D05	Research Center for Lubrication Technology of Tianjin Research Institute for Advanced Equipment, Tsinghua University
D06	Research Center for Heavy Machinery Technology of Tianjin Research Institute for Advanced Equipment, Tsinghua University
D07	Tianjin Research Institute for Advanced Equipment, Tsinghua University
D08	CIF (Beijing) Tech Co., Ltd
D09	Tianjin Tsing-ke Environmental Protection Co.,Ltd
D10	XIAMEN TENKEY AUTOMATION CO.,LTD
D11	GB&C Technologies Inc.
D12	Bruker (Beijing) Scientific Technology Co., Ltd.
D13	Jiangsu LEBO Scientific Instrument Co., LTD
D14	Biolin Scientific AB
D15	Harbin AMT Technologies Co., Ltd.
D16	Nanjing KathMatic Technology Co., LTD
D17	JIANGXI HUAWU BRAKE CO.,LTD.
D18	Lanzhou Zhongke Kaihua Technology Development Co.,LTD
D20	Eternal and Excellent Precision Instrument Equipment (Shanghai) Co., Ltd.
D21	Chotest Technology Inc.
D22	CHINA ASSOCIATION OF MACHINERY EQUIPMENT MAINTENANCE AND RENOVATION, PROFESSIONAL COMMITTEE ON LUBRICATION

专业的超滑产品服务商和供应商

PROFESSIONAL SUPER-LUBRICITY PRODUCT SERVICE PROVIDER AND SUPPLIER

超滑科技（佛山）有限责任公司建于2020年，是一家拥有核心自主知识产权的高科技公司，集超滑产品研发、生产、销售及相关技术服务为一体，旨在进行超滑应用技术研究及装备开发，引领和带动润滑行业发展，进一步提高我国重大装备润滑节能降耗相关产业的整体技术。

FOUND IN 2020, SUPER LUBRICITY TECHNOLOGY(FOSHAN)CO., LTD. IS A HIGH-TECH COMPANY WITH CORE INDEPENDENT INTELLECTUAL PROPERTY RIGHTS, INTEGRATING RESEARCH AND DEVELOPMENT, PRODUCTION, MARKETING, AND RELEVANT TECHNICAL SERVICES OF SUPER-LUBRICITY PRODUCTS, AIMING AT RESEARCH OF SUPER-LUBRICITY APPLICATION TECHNOLOGY AND DEVELOPMENT OF EQUIPMENT, LEADING AND DRIVING THE DEVELOPMENT OF LUBRICATION INDUSTRY, SO AS TO FURTHER IMPROVE THE OVERALL TECHNICAL LEVEL OF THE INDUSTRIES RELATED TO MAJOR EQUIPMENT LUBRICATION, ENERGY CONSERVATION AND CONSUMPTION REDUCTION IN CHINA.

公司业务 CORPORATE BUSINESS

金属加工液产品
METAL PROCESSING FLUID PRODUCTS



润滑系统装备
LUBRICATION SYSTEM EQUIPMENT



先进装备及核心组部件
ADVANCED EQUIPMENT AND CORE COMPONENTS



风电运维服务
WIND POWER OPERATION AND MAINTENANCE SERVICES



粘黏剂
ADHESIVES



年产值：近亿元
100000000元
ANNUAL OUTPUT VALUE:
APPROXIMATELY RMB 100
MILLION YUAN

全资子公司
3家
NUMBER OF WHOLLY-
OWNED SUBSIDIARIES: 3

授权专利
13项
NUMBER OF AUTHORIZED
PATENTS: 13

研发办公场所面积
15000 m²
AREA OF R&D PREMISES:
15,000m²

先进研发测试设备总值
200000000元
TOTAL VALUE OF ADVANCED
R&D AND TEST EQUIPMENT:
RMB 200 MILLION YUAN

超滑科技的科研团队涵盖机械、化学、材料、生物、计算机等多个专业领域，以国家级高层次人才为领头人，注重学术水平和专业技能的结合。团队立足于国际超滑理论研究和应用，率先布局超滑和绿色润滑技术研发和技术体系。

LED BY NATIONAL HIGH-LEVEL TALENTS, THE SCIENTIFIC RESEARCH TEAM OF SUPERLUB TECH COVERS MANY PROFESSIONAL FIELDS SUCH AS MACHINERY, CHEMISTRY, MATERIALS, BIOLOGY, AND COMPUTER, AND LAY STRESS ON COMBINATION OF ACADEMIC LEVEL AND PROFESSIONAL SKILLS. BASED ON INTERNATIONAL SUPER-LUBRICITY THEORETICAL RESEARCH AND TECHNICAL APPLICATION, THE TEAM TAKES THE LEAD IN LAYOUT OF SUPER-LUBRICITY AND GREEN LUBRICATION TECHNOLOGY RESEARCH AND DEVELOPMENT AND TECHNICAL SYSTEM.



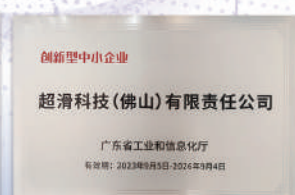
三体系统认证
Certification of Three Systems



FLENDER认证
FLENDER Certification



高新技术企业
High-tech Enterprise



创新型中小企业
Innovative Small and Medium-sized



扫码关注公众号

Scan the QR code to follow the WeChat official account



华海清科股份有限公司

Hwatsing Technology Co., Ltd.

华海清科股份有限公司 (简称“华海清科”, 股票代码: 688120) 是一家拥有核心自主知识产权的高端半导体设备制造商, 公司主要产品包括CMP设备、减薄设备、湿法设备、晶圆再生、关键耗材与维保服务, 打造“装备+服务”的平台化战略布局。

核心团队来自半导体行业专业人才, 公司主要产品及服务已广泛应用于集成电路、先进封装、大硅片、第三代半导体、MEMS、Micro LED等制造工艺。

华海清科依靠国际化的经营理念和人才团队、先进的工艺试验条件, 致力于于半导体领域企业提供先进设备及工艺集成解决方案, 遵循“科技服务社会”的公司宗旨, 持续以优良品质和卓越服务赢得国内外用户的信赖, 逐步发展成为国际知名的集成电路高端装备及技术服务供应商。

Hwatsing Technology Co., Ltd. (Stock Code: 688120) is a high-end semiconductor equipment manufacturer with core independent intellectual property rights. The company's main products include Chemical Mechanical Polishers, Grinders, Wet Process Equipment, Wafer Reclaim, Consumables and Maintenance Services, and form the platform strategy of "equipment + services".

The core team members are professionals in the semiconductor industry. The company's main products and services have been widely used in integrated circuits, advanced packaging, large silicon wafers, third-generation semiconductor, MEMS, Micro LED and other manufacturing processes.

Relying on the international business philosophy, talent team and advanced process test conditions, Hwatsing is committed to providing advanced equipment and process integration solutions for companies in the semiconductor field. We follow the tenet of "serving society with science and technology", and continue to win the trust of customers at home and abroad with excellent quality and service. We have gradually developed into an internationally renowned supplier of integrated circuit high-end equipment and technical services.

CMP设备

CHEMICAL MECHANICAL
POLISHERS

Universal-300 T



产品优势/ADVANTAGES

抛光头具有8个独立气压分区
8-zone polish head

集成多种终点检测技术
Integrated with multiple end-point
detection systems

先进清洗技术

Advanced cleaning technology

满足先进制程的技术需求
Meet the technical requirements for
advanced process

Universal-300 E



产品优势/ADVANTAGES

性能稳定

High reliability

高性价比

Cost-effective

满足成熟制程的技术需求

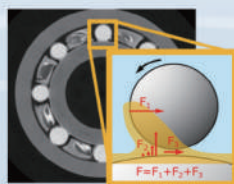
Meet the technical requirements for
mature process

MOTION & CONTROL™

NSK

NSK 4 Core Technologies Make the Future More Comfortable and Environmentally Friendly

Low Friction • Light Weight • Smartification • Damage Prediction



Tribology

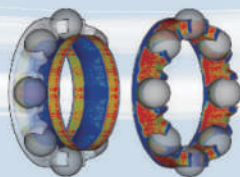
**4 CORE
TECHNOLOGIES**



Mechatronics



Materials



Viscosity [Pa·s]
2.2e-4 1500

Numerical Simulation



EXPERT OF HIGH-END LUBRICANT SOLUTION FROM CHINA

中国高端润滑产品专家

CONTACT: 0532-8588 0066



Scan with WeChat

Company Profile 公司介绍

"Lubemater" founded in 2010 by the high-end equipment lubrication research team from the National Key Laboratory for Lubricating Materials, specializes in providing domestically produced lubricant alternatives for major industries and high-end equipment in China.

青岛中科润美润滑材料技术有限公司是润滑材料全国重点实验室高端装备润滑研究团队于2010年发起创办的高科技公司,致力于为我国重要工业及高技术产业高端装备提供润滑油脂产品方案。

Intelligent Manufacturing 生产“智”造

Fully automated intelligent production workshops and three-dimensional warehousing can achieve:
全自动智能化生产车间、立体仓储,可实现:

Lubricating oil
润滑油
8,000
tons/year 吨/年

Grease
润滑脂
3,000
tons/year 吨/年

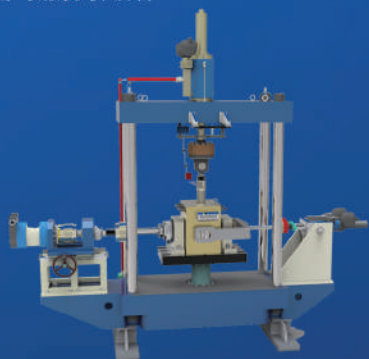
Synthetic esters
合成脂
5,000
tons/year 吨/年

Business Direction 业务方向





关注中机试验
了解更多行业资讯



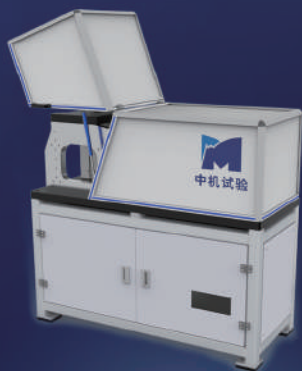
组合加载轴承摩擦副耐久试验机
Combined loading bearing friction pair durability testing machine

概述

组合加载轴承摩擦副耐久试验机主要适用于关节轴承摩擦副衬垫在径向和(或)轴向恒定载荷、交变载荷作用下,完成周向回转摆动、倾斜运动及其组合运动的寿命试验。能实现径向加载、轴向加载、轴向摆动和倾斜摆动的复合运动。

主要参数

1. 载荷范围: 10kN ~ 1000kN;
2. 扭矩范围: 500Nm ~ 16000Nm;
3. 摆动角度: $\pm 45^\circ$;
4. 摆动频率: 0.1Hz ~ 30Hz;
5. 环境温度: $-60^\circ\text{C} \sim 350^\circ\text{C}$ 和 $350^\circ\text{C} \sim 800^\circ\text{C}$



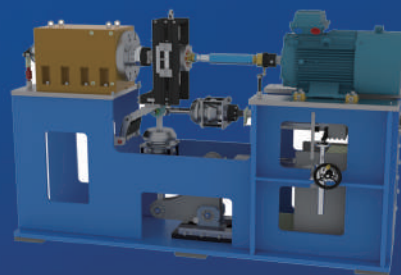
平面往复摩擦磨损试验机
Flat reciprocating friction and wear testing machine

概述

平面往复摩擦磨损试验机主要用于测定各种平面轴承衬垫或涂层在承受载荷情况磨损疲劳测试。

主要参数

1. 径向最大载荷: 50kN;
2. 轴向往复运动位移: $\pm 50\text{mm}$;
3. 最大运动速度: 80mm/s;
4. 试验频率: 0~10Hz;
5. 环境温度(油温): 室温~200°C; 可增加盐雾环境



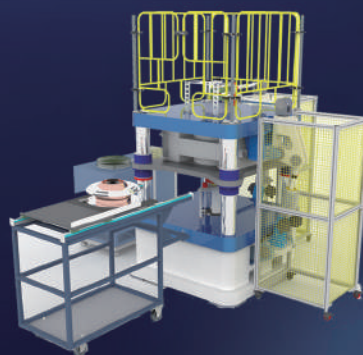
轴承动态载荷摩擦力矩测量试验机
Bearing dynamic load friction torque measurement testing machine

概述

轴承动态载荷摩擦力矩测量试验机是主要用于模拟轴承在使用环境和服役工况下的摩擦力矩情况测量,也可用于测试相同轴承使用不同润滑介质对摩擦力矩的影响。

主要参数

1. 试验最高转速: 2000 Rpm
2. 试验最大径向载荷: 12 kN
3. 试验最大轴向载荷: 10 kN
4. 扭矩测量: 2 Nm 采集精度: $\pm 0.2\%F.S$
5. 测量参数: 力矩、转速、载荷、温度、振动。



薄层自润滑材料摆动摩擦服役性能试验机
Thin layer self-lubricating material rotary friction performance testing machine

概述

薄层自润滑材料摆动摩擦服役性能试验机专用于薄层复合材料摆动摩擦性能测试的设备。可以通过控制系统载荷、温度及摆动模式,近似模拟材料使用的实际工况条件,实时测量材料的摆动摩擦性能,动力学性能等参数,客观实际的反应材料在使用工况下的综合性能。

主要参数

1. 试验摩擦对偶接触形式: 半球冠; 对偶运动轨迹: 三维球面; 半球体直径规格 $R: 80\text{mm} < R < 300\text{mm}$;
2. 轴向(Z向)作动器最大静态载荷: 160kN;
3. 翻转(Y向)摆动作动器最大静态载荷: $\pm 50\text{kN}$;
- 3.1 试验频率: 0.2~2Hz;
- 3.2 行程: 摆动角度 $> 15^\circ$;
4. 倾斜(X向)摆动作动器最大静态载荷: $\pm 50\text{kN}$;
- 4.1 试验频率: 0.2~2Hz;
- 4.2 行程: 摆动角度 $> 15^\circ$;
5. 环境箱温度范围: $-60^\circ\text{C} \sim +150^\circ\text{C}$

中机试验装备股份有限公司
Sinotest Equipment Co., Ltd

总部地址: 中国吉林省长春市越达路1118号
Headquarters address: 1118 Yueda Road, High-tech Zone, Changchun City, Jilin Province, China

研发及营销中心地址: 中国北京市朝阳区北沙滩一号院
R&D and marketing center address: Yard 1, Beishatan, Chaoyang District, Beijing, China



中国科学院兰州化学物理研究所 润滑材料重点实验室

State Key Laboratory of Solid Lubrication, Lanzhou Institute of Chemical Physics,
Chinese Academy of Sciences



坚守期刊阵地

Tribology+Platform

拓展服务平台



摩擦学学报(中英文)

期刊介绍:

中国科学院主管、中国科学院兰州化学物理研究所主办、科学出版社出版

1981年7月正式创刊《固体润滑》

1992年第1期更名为《摩擦学学报》

1992年入选中文核心期刊

1992年为EI收录至今

2000年《摩擦学学报》由季刊改为双月刊

2023年《摩擦学学报》由双月刊改为月刊

2024年《摩擦学学报》文种由中文改为中英文

收录信息:

美国工程索引(EI Compendex)核心期刊

Scopus 数据库来源期刊

美国《化学文摘》(CA)来源期刊

日本《科学技术文摘速报》(JST)来源期刊

美国《剑桥科学文摘》(CSA)来源期刊

中国科学引文数据库(CSCD)来源期刊

中文核心期刊要目总览(第十版)核心期刊

中国核心期刊(遴选)数据库来源期刊



名誉主编薛群基院士



主编刘维民院士

润滑科技信息平台

Lubrication Technology Information Platform



润滑科技信息平台依托中国科学院兰州化

学物理研究所润滑材料重点实验室创建

宗旨: 加强科技信息服务支撑

提升科技资源使用效率

目标: 构建摩擦润滑领域各类产学研信息
的一站式获取平台、摩擦润滑及相
关领域各类产品和技术的推广平台



0W-30

昆仑天润 KR9-T

C3\SP 全合成高性能发动机油



PAO 全合成技术

聚 α 烯烃分子技术激发
引擎动力

国六b旗舰汽车首选

GPF/DPF保护，节省
燃油，助力碳减排

高标准油品

欧标、美标、OEM规
范产品，汽油、轻负
荷柴油发动机

应用地域更广

适用最低环境温度可
达-40°C，四季可用，
养护无忧

专业抗磨 润物无声

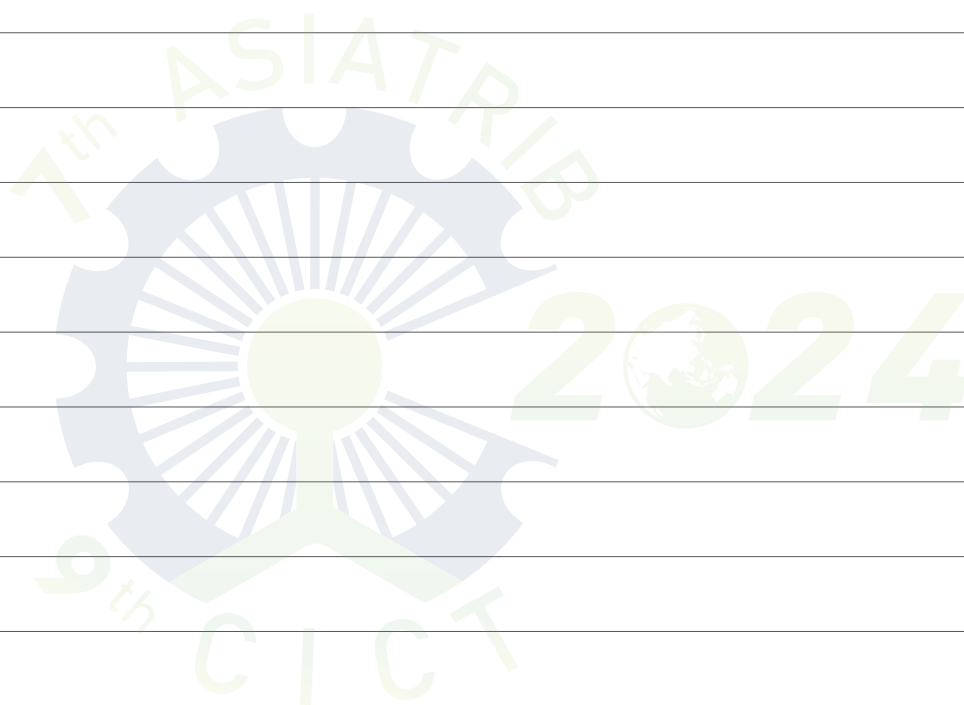






















Hosted by Chinese Tribology Institute, CMES
Organized by Tianjin Research Institute for Advanced Equipment, Tsinghua University