

Announcement and Call for Papers

1st International Conference on Mechanical System Dynamics (1st ICMSD)

www.icmsd-conference.com

23-29 November, 2021, Nanjing, China

Dear colleagues,

The First International Conference on Mechanical System Dynamics (1st ICMSD) will be held from **November 23 to 29, 2021 in Nanjing, China, in a hybrid mode** (in person and online). Up to now, 13 experts from 8 countries, including **11 members of National Academy of Science or National Academy of Engineering**, have confirmed to give **Plenary/Keynote Speeches**. The conference will be a high-level academic event in this field.

The standing ICMSD is **jointly initiated and organized by more than 20 famous universities** from more than 10 countries. It will be held every odd-numbered year and held in different countries on a rotating basis. The 1st ICMSD is hosted by Nanjing University of Science & Technology (NJUST), The Chinese Society of Theoretical and Applied Mechanics (CSTAM), International Association of Applied Mechanics (IAAM), Wiley, Chinese Society of Launch Dynamics (planned) and International Journal of Mechanical System Dynamics. The standing Steering Committee of ICMSD now consists of **34** famous international experts worldwide, including **14** members of National Academy of Science or National Academy of Engineering, **14** Editors-in-Chief of international journals in the related fields, and **12** presidents/chairmen of international academic associations.

The vision of the conference is to bring together different kinds of research to enhance multidisciplinary interaction, and to ultimately promote the development of mechanical system dynamics to a higher level. It is pleased to invite prospective scientists to attend the 1st ICMSD. Submissions of either full-length papers or abstracts are welcome. **All accepted full papers will be submitted to the IOP conference series for publication, which will be indexed by EI Compendex, Scopus, etc.**

General Topics (but not limited to)

- **Modeling, computation, and software developments**
 - Formulation of multibody system or finite element system dynamics with characteristics such as time varying parameters, time delay, nonlinearity, large deformation, friction, contact and impact, fatigue and fracture, multi scale

- Dynamics modeling of multi-disciplinary systems such as mechatronic system, smart materials/structures system, multi-agent system, human-machine integrated system, and biomechanical system
- Dynamics modeling of mechanical systems integrated with electronic, electrical, optical, thermal, magnetic, acoustic, aero, rheological, and fluidic components
- Nonlinear vibrations and nonlinear dynamics of mechanical systems and structures, structural vibration at different scales
- Dynamics modeling combined with advanced applied mathematics methods such as fractional-order modeling, model order reduction, surrogate models, mixed first-principles and data-integrated modeling
- Dynamics simulation techniques such as co-simulation, high-performance computing
- Novel numerical algorithms for mechanical system dynamics
- Aspects of uncertainty, robustness, sensitivity, safety, and reliability
- Verification, validation & accreditation theories and methods
- Development and application of open-source/commercial software regarding visualization & computer graphics, database and data sharing
- **Design, optimization, diagnostics, and control**
 - System engineering and multi-disciplinary design
 - Multi-disciplinary optimization, topology optimization, multi-objective optimization, etc.
 - Health monitoring, fault diagnosis and prediction
 - Smart sensing and actuation
 - Model-based control or combined with data-driven control
 - Vibration and noise control, trajectory planning and motion control
- **Measurement and testing**
 - Modal testing and analysis
 - Measurement techniques for vibrations and dynamics response
 - Embedded system and hardware-in-the-loop simulation
 - Signal analysis & processing
 - Inverse problem/system identification
- **Applications of mechanical system dynamics to**
 - Manned/unmanned aerial vehicles, underwater/surface/amphibious ships, tracked/wheeled vehicles, high-speed trains, robots, machine tools, wind turbines, civil structures, etc.
 - Advanced manufacturing and production such as additive manufacturing, 4D printing, virtual manufacturing, 3D assembly
 - Production process of energetic/polymeric material

Conference Chairman



Xiaoting Rui, Nanjing University of Science and Technology, China. Member of Chinese Academy of Sciences; Editor-in-Chief of International Journal of Mechanical System Dynamics.

Conference Co-Chairmen



Marco Amabili, McGill University, Canada. Academician of Canada and Europaea; Chair of the Canadian National Committee for IUTAM; Former Editor-in-Chief of Journal of Fluids and Structures.



Seung-Bok Choi, The State University of New York (SUNY Korea), Korea. Academician of Korea; Editor-in-Chief of International Journal of Mechanical Systems Engineering.



Yonggang Huang, Northwestern University, USA. Academician of USA, Europaea and China; Editors-in-Chief of Journal of Applied Mechanics (ASME Transactions); Co-Editors-in-Chief of Theoretical and Applied Mechanics Letters.



Aki Mikkola, LUT University, Finland. Chair of International Federation for the Promotion of Mechanism and Machine Science; Editor-in-Chief of Multibody System Dynamics.



Tianshou Zhao, The Hong Kong University of Science and Technology, China. Academician of China; Editor-in-Chief of International Journal of Heat and Mass Transfer; Former Editor-in-Chief of Applied Thermal Engineering.

Plenary Speakers

Xiaoting Rui

Nanjing University of Science and Technology, China. Academician of China; Editor-in-Chief of International Journal of Mechanical System Dynamics.

Aki Mikkola

LUT University, Finland. Chair of International Federation for the

Promotion of Mechanism and Machine Science; Editor-in-Chief of Multibody System Dynamics.

Haiyan Hu

Beijing Institute of Technology, China. Academician of China.

Marco Amabili

McGill University, Canada. Academician of Canada and Europaea.

Keynote Speakers

Seung-Bok Choi

The State University of New York (SUNY Korea), Korea. Academician of Korea; Editor-in-Chief of International Journal of Mechanical Systems Engineering.

Wanlin Guo

Nanjing University of Aeronautics and Astronautics, China. Academician of China.

Ross McAree

The University of Queensland, Australia. Academician of Australia; Former Chair for the Australian Academy of Science National Committee on Mechanical Sciences.

Sharif Rahman

University of Iowa, USA.

Pol D Spanos

Rice University, USA. Academician of USA, Europaea, Greece, Russia and China; Editor-in-Chief of International Journal of Nonlinear Mechanics; Editor-in-Chief of Probabilistic Engineering Mechanics.

Marian Wiercigroch

University of Aberdeen, UK. Academician of UK; Editor-in-Chief of International Journal of Mechanical Sciences.

Chuanzeng Zhang

University of Siegen, Germany. Academician of Europaea; Former Vice-President of International Chinese Association for Computational Mechanics.

Tianshou Zhao

The Hong Kong University of Science and Technology, China. Academician of China; Editor-in-Chief of International Journal of Heat and Mass Transfer; Former Editor-in-Chief of Applied Thermal Engineering.

George Z.H. Zhu

York University, Canada. Academician of Canada; Editor-in-Chief of International Journal of Space Science and Engineering.

Standing Steering Committee



Marco Amabili, McGill University, Canada. Academician of Canada and Europaea; Chair of the Canadian National Committee for IUTAM; Former Editor-in-Chief of Journal of Fluids and Structures.



Jorge Angeles, McGill University, Canada. Academician of Canada; Former President of International Federation for the Promotion of Mechanism and Machine Science.



Seung-Bok Choi, The State University of New York (SUNY Korea), Korea. Academician of Korea; Editor-in-Chief of International Journal of Mechanical Systems Engineering.



Peter Eberhard, University of Stuttgart, Germany. Former Treasurer of IUTAM; Former Chairman of International Association on Multibody System Dynamics.



Daining Fang, Beijing Institute of Technology, China. Academician of China; Presidents of the Chinese Society of Theoretical and Applied Mechanics; Former Editor-in-Chief of Acta Mechanica Solida Sinica.



Mergen Ghayesh, University of Adelaide, Australia.



Wanlin Guo, Nanjing University of Aeronautics and Astronautics, China. Academician of China.



Yonggang Huang, Northwestern University, USA. Academician of USA, Europaea and China; Editors-in-Chief of Journal of Applied Mechanics (ASME Transactions); Co-Editors-in-Chief of Theoretical and Applied Mechanics Letters.



Jozsef Kovecses, McGill University, Canada.



Jinsong Leng, Harbin Institute of Technology, China. Academician of Europaea; Vice Presidents of International Committee on Composite Materials; Editor-in-Chief of International Journal of Smart & Nano Materials.



Caishan Liu, Peking University, China.



Sheng Liu, Wuhan University, China.



Zhen-Hua LU, Tsinghua University, China.



Pierangelo Masarati, Politecnico di Milano, Italy.



Ross McAree, The University of Queensland, Australia. Academician of Australia; Former Chair for the Australian Academy of Science National Committee on Mechanical Sciences.



Aki Mikkola, LUT University, Finland. Chair of International Federation for the Promotion of Mechanism and Machine Science; Editor-in-Chief of Multibody System Dynamics.



Jie Pan, The University of Western Australia, Australia.



Sharif Rahman, University of Iowa, USA.



Gexue Ren, Tsinghua University, China.



Xiaoting Rui, Nanjing University of Science and Technology, China. Academician of China; Editor-in-Chief of International Journal of Mechanical System Dynamics.



Ahmed A. Shabana, University of Illinois at Chicago, USA. Former Editor-in-Chief of Journal of Computational and Nonlinear Dynamics.



Yong Shi, Stevens Institute of Technology, USA.



Pol D Spanos, Rice University, USA. Academician of USA, Europaea, Greece, Russia and China; Editor-in-Chief of International Journal of Nonlinear Mechanics; Editor-in-Chief of Probabilistic Engineering Mechanics.



Mohammad Osman Tokhi, London South Bank University, UK. Fellow of Institution of Engineering and Technology; Editor-in-Chief of Journal of Low Frequency Noise, Vibration and Active Control; Former Editor-in-Chief of Advances in Acoustics and Vibration.



Yueguang Wei, Peking University, China. Academician of China; Former Editor-in-Chief of Chinese Journal of Theoretical and Applied Mechanics.



Fen Wu, North Carolina State University, USA.



Shaopu Yang, Shijiazhuang Tiedao University, China. Vice President of the Chinese Society of Theoretical and Applied Mechanics.



Chengzhi Yuan, University of Rhode Island, USA.



Chuanzeng Zhang, University of Siegen, Germany. Academician of Europaea; Former Vice-President of International Chinese Association for Computational Mechanics.



Weihong Zhang, Northwestern Polytechnical University, China.



Xuping Zhang, Aarhus University, Denmark.



Ze Zhang, Zhejiang University, China. Academician of China; Editor-in-Chief of Materials Today Nano.



Tianshou Zhao, The Hong Kong University of Science and Technology, China. Academician of China; Editor-in-Chief of International Journal of Heat and Mass Transfer; Former Editor-in-Chief of Applied Thermal Engineering.



Jihong Zhu, Tsinghua University, China.

International Scientific Committee

Marco Amabili

McGill University, Canada. Academician of Canada and Europaea; Chair of the Canadian National Committee for IUTAM; Former Editor-in-Chief of Journal of Fluids and Structures.

Seung-Bok Choi

The State University of New York (SUNY Korea), Korea. Academician of Korea; Editor-in-Chief of International Journal of Mechanical Systems Engineering.

Lanhong Dai	Institute of Mechanics, Chinese Academy of Sciences, China.
Peter Eberhard	University of Stuttgart, Germany. Former Treasurer of IUTAM; Former Chairman of International Association on Multibody System Dynamics (IMSD).
Daining Fang	Beijing Institute of Technology, China. Academician of China; Presidents of the Chinese Society of Theoretical and Applied Mechanics; Former Editor-in-Chief of Acta Mechanica Solida Sinica.
Mergen Ghayesh	University of Adelaide, Australia.
Wanlin Guo	Nanjing University of Aeronautics and Astronautics, China. Academician of China.
Yonggang Huang	Northwestern University, USA. Academician of USA, Europaea and China; Editors-in-Chief of Journal of Applied Mechanics (ASME Transactions); Co-Editors-in-Chief of Theoretical and Applied Mechanics Letters.
Jinsong Leng	Harbin Institute of Technology, China. Academician of Europaea; Vice Presidents of International Committee on Composite Materials; Editor-in-Chief of International Journal of Smart & Nano Materials.
Chenfeng Li	Swansea University, UK. Editor-in-Chief of Engineering Computations.
Weihua Li	University of Wollongong, Australia.
Caishan Liu	Peking University, China.
Sheng Liu	Wuhan University, China.
Yixin Liu	Nanjing Artillery College, China. Academician of China.
Pierangelo Masarati	Politecnico di Milano, Italy.
Ross McAree	The University of Queensland, Australia. Academician of Australia; Former Chair for the Australian Academy of Science National Committee on Mechanical Sciences.
Aki Mikkola	LUT University, Finland. Chair of International Federation for the Promotion of Mechanism and Machine Science; Editor-in-Chief of Multibody System Dynamics.
Friedrich Pfeiffer	Technical University München, Germany. Academician of Russia.
Sharif Rahman	University of Iowa, USA.
Gexue Ren	Tsinghua University, China.
Ahmed A. Shabana	University of Illinois at Chicago, USA. Former Editor-in-Chief of Journal of Computational and Nonlinear Dynamics.
Pol D Spanos	Rice University, USA. Academician of USA, Europaea, Greece, Russia and China; Editor-in-Chief of International Journal of Nonlinear Mechanics; Editor-in-Chief of Probabilistic Engineering Mechanics.
Marian Wiercigroch	University of Aberdeen, UK. Fellow of the Royal Society of Edinburgh; Editor-in-Chief of International Journal of Mechanical Sciences.
Shaopu Yang	Shijiazhuang Tiedao University, China. Vice President of the Chinese Society of Theoretical and Applied Mechanics.

Chengzhi Yuan	University of Rhode Island, USA.
Chuanzeng Zhang	University of Siegen, Germany. Academician of Europaea; Former Vice-President of International Chinese Association for Computational Mechanics.
He Zhang	Nanjing University of Science and Technology, China.
Xuping Zhang	Aarhus University, Denmark.
Weihong Zhang	Northwestern Polytechnical University, China.
Tianshou Zhao	The Hong Kong University of Science and Technology, China. Academician of China; Editor-in-Chief of International Journal of Heat and Mass Transfer; Former Editor-in-Chief of Applied Thermal Engineering.
Kun Zhou	Nanyang Technological University, Singapore. Editor-in-Chief of Smart Manufacturing; Co-Editor-in-Chief of Journal of Micromechanics and Molecular Physics.
George Z.H. Zhu	York University, Canada. Academician of Canada; Editor-in-Chief of International Journal of Space Science and Engineering.
Jihong Zhu	Tsinghua University, China.

Organizing Committee

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Mengyin Fu, Nanjing University of Science and Technology, China

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Zhiyong Zhang, Nanjing University of Science and Technology, China

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Zhaojun Pang, Nanjing University of Science and Technology, China

Sponsors



National Nature Science Foundation of China



China Association for Science and Technology (pending application)

Announcement

On July 10, 2021, the launching ceremony of the standing International Conference on Mechanical System Dynamics (ICMSD), was held at the Sports Center of Nanjing University of Science & Technology (NJUST), Nanjing, China. More than 200 guests attended the event, including 26 academicians from the Chinese Academy of Sciences or Engineering, 4 foreign academicians, related leaders from the Ministry of Education, the Chinese Association for Science and Technology, the State Administration of Science, Technology, and Industry for National Defense, and Jiangsu Province.



Guest Speech from Chairman of CSTAM, Academician Daining Fang



Guest Speech from former President of GAMM, Academician Friedrich Pfeiffer



Launching ceremony

At the launching ceremony, the guest representative, Prof. Daining Fang, Member of Chinese Academy of Sciences, Chairman of the Chinese Society of Theoretical & Applied Mechanics (CSTAM), pointed out that mechanical system dynamics had been and would always be important for many industries, and thought that the standing ICMSD could become a professional platform for the development of mechanical system dynamics and promoting potential international cooperation. The guest representative, Prof. Friedrich Pfeiffer from Technical University München, former President of German Association of Applied Mathematics and Mechanics (GAMM), Foreign Member of the Russian Academy of Sciences, gave a video speech. He said that mechanical system dynamics was a field of large and ever-increasing importance and believed that this standing international conference would definitely go from strength to strength in the future. After that, 7 Academicians including Xiaoting Rui, Jin Duan, Dongxu Li, Yican Wu, Jinwu Xiang, Zhizhen Ye and Meifang Zhu pressed the launch button of the conference. Finally, the promotional video of the 1st ICMSD was displayed.

Welcome to Nanjing

Nanjing is the capital of Jiangsu province of the People's Republic of China and the second largest city in the East China region. With a long cultural tradition and strong support from local educational institutions, Nanjing is commonly viewed as a "city of culture" and one of the more pleasant cities to live in China.

We would like to send our greetings and looking forward to seeing you in Nanjing, China for memorable experiences.



Important Dates

Abstract submission deadline	September 18, 2021
Full text submission deadline	October 18, 2021
Early-bird registration deadline	October 18, 2021
Regular registration deadline	November 10, 2021
Conference start	November 23, 2021
Conference end	November 29, 2021

Contact us

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