

Event report

International Symposium on Upcoming Prominent Engineering solutions

The International Symposium on Upcoming Prominent Engineering solutions (ISUPEN) was held online on September 29 2023. The symposium aims to strengthen cooperation with related overseas organizations and further promote the internationalization of JSPE. In this symposium, innovative R&D activities of researchers and engineers in the field of precision engineering were introduced to reveal prominent engineering solutions for various recent social issues. The direction in which precision engineering should move toward to form an international community in the future was also discussed. The symposium consisted of a special talk, 4 keynote lectures and 14 invited talks. The symposium program is posted on the next page.

There were more than 250 registrations from 15 countries and regions. There were many vigorous discussion and the symposium was successfully closed. The organizing committee would like to express our sincere gratitude to the attendees.

ISUPEN

online



The Japan Society for
Precision Engineering

International Symposium on Upcoming Prominent ENgineering solutions

September 29, 2023

Online, The Japan Society for Precision Engineering (JSPE)

The International Symposium on Upcoming Prominent ENgineering solutions (ISUPEN) will be held online on September 29, 2023. The symposium aims to strengthen cooperation with related overseas organizations and further promote the internationalization of JSPE. In this symposium, innovative R&D activities of researchers and engineers in the field of precision engineering will be introduced to reveal prominent engineering solutions for various recent social issues. The direction in which precision engineering should move toward to form an international community in the future will also be discussed. The symposium will consist of a special talk, 4 keynote lectures and 14 invited talks.

Registration FREE

QR code:



URL link:

<https://forms.gle/iRiX7Nivkw8g9RtG9>

Japan Time
(GMT+9:00)

9:00

Opening address and Introduction to ISUPEN



Dr. Kazutoshi Katahira

Chairman of International Affair Committee of JSPE
Senior Research Scientist
RIKEN
Japan

9:05

Special talk: Message from the president of JSPE



Dr. Makoto Fujishima

President of JSPE
Vice President
DMG MORI CO., LTD.
Japan

9:15

Keynote 1: *Courage to step into a new realm to be a global precision engineer*



Prof. Masakazu Soshi

Professor
University of California Davis
U.S.A.

Session1:

**Think about “how to make micro-structure (texture)”,
“how to analyze them” and “phenomena at the interfaces”**

9:45

***Texturing for biomaterials and its application to enhance
surface function***



Prof. Masayoshi Mizutani

Professor
Tohoku University
Japan

10:05

***Engineering and measuring systemic multi-organ
interactions***



Prof. Yi-Chin Toh

Associate Professor
The Queensland University of Technology
Australia

10:25

***Recent Advance and Future Potential in Synchrotron X-ray
Tomography***



Prof. Wataru Yashiro

Professor
Tohoku University
Japan

10:45

Break

Session2: How can we understand “what is happening” during the metal cutting process?

11:00

***Direct observation of plastic deformation behavior in metal cutting process*****Prof. Tatsuya Sugihara**

Associate Professor
Osaka University
Japan

11:20

***Surface integrity estimation in end milling by utilizing model-based inverse analysis of cutting force*****Prof. Norikazu Suzuki**

Professor
Chuo University
Japan

11:40

***Complex plastic flows and the simulation of machining of ductile polycrystalline aggregates*****Prof. Narayan K Sundaram**

Associate Professor
Indian Institutes of Technology
India

12:00

Keynote 2:***Visions of Korean Society for Precision Engineering (KSPE): Smart & Green*****Prof. Sang Won Lee**

Professor
Sungkyunkwan University
South Korea

12:30

Lunch time

Session 3:**JSPE Affiliate session****– frontier research of JSPE young researchers –**

13:10

***Vision of deployment of automated driving vehicles and their validation*****Dr. Masao Nakagawa**Researcher
National Traffic Safety and Environment Laboratory
Japan

13:30

***Plasma-electrolysis hybrid process for micro-/nano-structuring applications*****Prof. Yonghua Zhao**Associate Professor
Southern University of Science and Technology
China

13:50

***Vacuum pressure measurements through the use of laser and dimensional measurement techniques*****Dr. Yoshinori Takei**Senior Researcher
National Institute of Advanced Industrial Science and Technology
(AIST)
Japan

14:10

***Microsensors: A New Toolkit for Understanding Cellular Metabolism*****Professor Ganesh Kumar Mani**Research Assistant Professor (Former JSPS Fellow)
Korea Advanced Institute of Science and Technology (KAIST)
South Korea

14:30

***Highly efficient slurryless electrochemical mechanical polishing of SiC wafers*****Professor Yang Xu**Associate Professor
Xi'an Jiaotong University
China

14:50 Break

15:00 **Keynote 3:** *AI-powered OCD metrology on high aspect ratio structures in semiconductor manufacturing*



Prof. Liang-Chia Chen

Professor
National Taiwan University
Taiwan

Session 4: **Prominent technologies for industrial x-ray CT**

15:30 *Trend of industrial x-ray CT and its applications*



Prof. Yukie Nagai

Associate Professor
Tokyo Metropolitan University
Japan

15:50 *XXL-CT – a holistic 3D object capture method for valuable insights*



Dipl.-Ing. Michael Salamon

Group Leader
Fraunhofer IIS
Germany

16:10 *Data and software challenges in X-ray CT*



Dr. Richard Boardman

Principal Scientist
University of Southampton
U.K.

16:30 **Keynote 4:** *Brief introduction of euspen and current research activities of Bremen University (LFM)*



Dr.-Ing. Oltmann Riemer

Group Leader of Laboratory for Precision Machining (LFM)
Leibniz Institute for Materials Engineering - IWT
Germany

17:00 Closing

Organizing committee

Chair

Kazutoshi Katahira	RIKEN
Yukie Nagai	Tokyo Metropolitan University
Soo Hyeon Kim	The University of Tokyo
Ryo Koike	Keio University
Daisuke Matsuura	Tokyo Institute of Technology
Masayoshi Mizutani	Tohoku University
Masakazu Soshi	University of California Davis
Tatsuya Sugihara	Osaka University

Co-sponsors

Machine Tool Engineering Foundation

The AMADA Foundation

Mazak Foundation