



JSTP International Seminar on Precision Forging (9th ISPF)

11-14 March, 2024

Kyoto terrsa, Kyoto, Japan

General Info.: <http://www.jstp-ispf.com/>

Access map of Kyoto terrsa : <https://www.kyoto-terrsa.or.jp/>

Organized by Japan Society for Technology of Plasticity (JSTP)
(Directed by the Forging Committee of JSTP)

Schedule (Final)

March 11, 2024: Seminar at Kyoto Terrsa

09:00-09:30 Registration

09:30-09:45 Opening Ceremony

09:45-11:15 Keynote Lectures by 2023 JSTP International Prize Winner

(Chairman: *Dr. Yasuharu Yoshikawa*)

09:45-10:30 Identification of Flow Stress by the Inverse Analysis of Compression Test and Material Modelling for the Prediction of Microstructure Evolution

Prof. Jun Yanagimoto

10:30-11:15 Flexible Forming—A Key Factor for Sustainable Manufacturing

Prof. Peter Groche

11:15-12:30 Invited Lectures

(Chairman: *Dr. Yasuharu Yoshikawa*)

11:15-12:00 Modelling and Testing Fracture Occurrence in Metalforming Operations

Prof. Andrea Ghiotti

12:00-12:30 High-Strength Case-Hardening Steel for Simplified Gear Manufacturing Processes and Process Omission

Dr. Norimasa Tsunekage

12:30-13:30 Lunch

13:30-15:45 Invited Lectures

(Chairman: *Dr. Motoki Terano*)

13:30-14:15 Non-Heat-Treated Steel for Cold Forging with High Work-Hardening Exponent and Its Process Design

Dr. Youngseon Lee

14:15-14:45 Metal Processing Technologies Expected to Contribute to the Manufacturing of Electric Vehicle Motors in the Future

Dr. Shinichiro Fujikawa

14:45-15:15 Development of Advanced Plate Forging Methods

Prof. Zhigang Wang

15:15-15:45 A Review of Oscillation Forging

Dr. Ryo Matsumoto

15:45-16:15 Break

16:15-17:30 Oral Presentations by Invited Young Researchers/Engineers

(Chairman: *Prof. Yoshinori Yoshida*)

16:15-16:30 Producing Thin Magnesium Wires for Biomedical Applications by Dieless Wire Drawing

Ms. Merle Braatz

16:30-16:45	Joining by Plastic Deformation of Hybrid Busbars for Energy Distribution Systems <i>Dr. João P. M. Pragana</i>
16:45-17:00	The Roundness Profile Resulting from a New Adjustable Ironing Punch <i>Mr. Kaarel Siimut</i>
17:00-17:15	Metadynamic Recrystallization in Materials with Different Stacking Fault Energies <i>Dr. Sheng Ding</i>
17:15-17:30	Numerical Study of Temperature and Strain Rate Sensitivity on Recrystallization of Cogging Process of M50 Bearing Steel <i>Dr. Mohd Kaswandee Razali</i>
17:30-18:00	Break
18:00-20:00	Welcome Party at Kyoto Terrsa

March 12, 2024: Seminar at Kyoto Terrsa

09:00-09:15 Registration

09:15-10:00 Keynote Lecture by 2021 JSTP International Prize Winner

(Chairman: *Dr. Kazuhito Asai*)
New Developments in Coin Minting of Collector Coins
Prof. Paulo A. F. Martins

10:00-12:15 Invited Lectures

(Chairman: *Dr. Kazuhito Asai*)

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| 10:00-10:45 | Tribology of Forward Extrusion – from the Identification of Friction to the Prediction of Abrasive and Adhesive Wear
<i>Prof. Laurent Dubar</i> |
| 10:45-11:15 | Ring Compression Test for Lightweight Metal of Aluminum and Magnesium with Plastic Anisotropy
<i>Prof. Kazuhiko Kitamura</i> |
| 11:15-11:45 | Current Trend in Eco-friendly Lubricant Coating used for Cold Forging Process
<i>Dr. Kenichiro Oshita</i> |
| 11:45-12:15 | Die Technology for Precision Forging
<i>Dr. Eisuke Murai</i> |

12:15-13:15 Lunch

13:15-14:45 Poster Presentations by Invited Young Researchers/Engineers

- Effect of Cr Concentration and Oxide Scale Composition in Hot Rolling Tools
Mr. Jun Akaike
- Case Examples of Cold Forging Production
Mr. Tomonori Okamuro
- Investigation of Die Heating Conditions for Minimizing Transient Cycle Numbers Using Thermal Conduction Analysis
Mr. Takehiko Yazaki

- Microstructure Evolution and Modelling of Single-Phase Austenite and Ferrite Steels during Hot Forming Conditions
Mr. Holger Brüggemann
- Reduction of Anisotropic Mechanical Properties During Extrusion by Means of Additively Manufactured Dies
Mr. Fabian Esterl
- Comparing Process Maps Obtained Both Experimentally and Numerically to Define Temperature and Strain Rate Range for Hot Forging with Desired Microstructure– Part I
Mr. Rasim Köksa Ertan
- Improvement in Precision Forging of an Aluminium Pump Body for Automobile Exhaust Gas Treatment
Mr. Baptiste Faivre
- Wrinkling Prediction of Granular Media Filler Assisted Push Bending Thin Tubes
Dr. Wenlong Xie
- Comparing Process Maps Obtained Both Experimentally and Numerically to Define Temperature and Strain Rate Range for Hot Forging with Desired Microstructure– Part II
Ms. Betül Govercin
- Effect of Heat-Treatment on the Morphology of Forming Induced Damage and Non-Metallic Inclusions in Tubular Shafts
Mr. Tanmoy Rakshit
- Microstructural and Mechanical Evaluation of AA-6082 Tube Processed by Constrained Backward Flow Forming
Mr. Ali Beigzadeh
- Method for Determining the Flow Curve of Steel Considering Work Hardening Behavior
Mr. Atsushi Suzuki
- Sheet Metal Forming Using Plastic Tools Additively Manufactured by Fused Deposition Modelling
Dr. Naotaka Nakamura
- Automatic Measurement of Sheared Surface Length with In-Situ Shearing Test with Metaheuristic Image Analysis Algorithm
Dr. Takumi Nakane
- Effects of Punch Extraction on Dimensional Accuracy of Internal Gear in Cold Forging
Mr. Alireza Soleymanipoor
- Effect of Deformation in Rotary Forging on the Mechanical Properties and Microstructure of a Nickel-Based Superalloy
Dr. Young-yun Woo
- Charge Weld Evolution in Aluminium Extrusion
Mr. Eren Can Sariyarlioglu
- An Analytical Solution to the Strain Space Limitation in Asperity Flattening Experiments Combining Normal Loading with Biaxial In-Plane Strains
Dr. Maximilian Zwicker

14:45-15:15 Break

15:15-16:30 Oral Presentations by Invited Young Researchers/Engineers

(Chairman: *Dr. Nobuki Yukawa*)

- 15:15-15:30 Investigation on the Manufacture of Hybrid Aluminum Components using Compound Hot Extrusion and Cold Forging
Mr. Karl Christoph Groetzinger

- 15:30-15:45 New Forming Method of Rectangular Tube for Battery Case by Combining Backward Extrusion and Rolling
Mr. Yosuke Hosobe
- 15:45-16:00 Monitoring Lubricant Distribution in Industrial Cold Forging with Function-Enhanced Lubrication Systems
Mr. Christoph Kuhn
- 16:00-16:15 Increasing Impact Toughness of Cold Forged Airbag Gas Generators by Damage-Controlled Forming
Mr. Robin Gitschel
- 16:15-16:30 Finite Element Analysis of Width Enlargement Plate Forging with Spiral Grooved Tools
Dr. Asuka Kutsukake

16:30-17:15 Extra Lecture

- (Chairman: *Dr. Nobuki Yukawa*)
Stress Superposition in Metal Forming
Prof. A. Erman Tekkaya

17:15-18:00 Keynote Lecture by 2021 JSTP International Prize Winner

- (Chairman: *Dr. Nobuki Yukawa*)
The Future of Metal Forming in a World with Zero Emissions (WEB)
Prof. Julian M Allwood

18:00-19:00 Supper

19:00-20:30 Group Discussion

March 13, 2024: Plant tour -1, AICH STEEL and TOYOTA MOTOR

- 07:30 Departure from Kyoto Dai-Ichi Hotel
10:00-12:00 **Aichi Steel Corp.**
12:30-13:30 Lunch @Uotaro
14:00-16:00 **Toyota Motor Corp.**, Kinuura plant
18:00 Arrive at Kyoto Dai-Ichi Hotel

March 14, 2024: Plant tour - 2, SAKAMURA MACHINE and NICHIDAI

- 08:30 Departure from Kyoto Dai-Ichi Hotel
09:30-11:30 **Sakamura Machine Co., Ltd.**
12:00-14:30 Lunch @Kisenchaya & Excursion (Byodo-in)
15:00-17:30 **NICHIDAI Corp.**
17:30-19:30 Farewell Party at NICHIDAI Corp.
20:10 Arrive at Kyoto Dai-Ichi Hotel