

D-1 Hardcoating

Representative Organizer

Hiroyuki KOUSAKA (Nagoya University)

Co-organizers

Akinori ODA (Chiba Institute of Technology)

Tetsuhide SHIMIZU (Tokyo Metropolitan University)

Masahiro KAWAGUCHI (Tokyo Metropolitan Industrial Technology Research Institute)

Takayuki OHTA (Meijo University)

Xingrui DENG (Nagoya University)

Young-Jun JANG (Korea Photonics Technology Institute, Korea)

Oral Session March 28 (Sat.) Room 7

Chair : Ryuta Ichiki (Oita University), Masahiro Kawaguchi (Tokyo Metropolitan Industrial Technology Research Institute)

9:20 D1-O-01 **Effect of HIPIMS Pulse Frequency on Low Temperature Deposition of TiAlN Films**

¹Tetsuhide Shimizu, ²Yoshikazu Teranishi, ²Kazuo Morikawa, ²Hidetoshi Komiya, ²Hiroshi Nagasaka, ¹Ming Yang

*1 DIVISION OF HUMAN MECHATRONICS SYSTEMS, TOKYO METROPOLITAN UNIVERSITY
2 TOKYO METROPOLITAN INDUSTRIAL TECHNOLOGY RESEARCH INSTITUTE*

9:35 D1-O-02 **Tribological Behavior of Tetrahedral Amorphous Carbon (ta-C) Coatings at Elevated Temperatures**

Xingrui Deng, Hiroto Izuoka, Hiroyuki Kousaka, Noritsugu Umehara

DEPARTMENT OF MECHANICAL SCIENCE AND ENGINEERING, GRADUATE SCHOOL OF ENGINEERING, NAGOYA UNIVERSITY

9:50 D1-O-03 **Preparation of Superhydrophilic Inorganic/Organic SiO₂/PVB Hard Coating**

^{1,2}Sing-Rong Huang, ^{1,2}Hung-Sen Wei, ^{1,2}Ya-Chen Chang, ^{1,3}Chien-Cheng Kuo, ^{1,2}Hung-Chun Pong, ^{1,2}Cheng-Chung Lee

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3 GRADUATE INSTITUTE OF ENERGY ENGINEERING, NATIONAL CENTRAL UNIVERSITY*

Chair : Hiroyuki Kousaka (Nagoya University), Akinori Oda (Chiba Institute of Technology)

10:05 D1-O-04 **Application of ta-C Coating on WC Mold to Molded Glass Lens**

Young-Jun Jang, Juhyeon Choi, Jeong-Ho Kim, Hye-Jeong Kim

ULTRA-PRECISION OPTICS RESEARCH CENTER, KOREA PHOTONICS TECHNOLOGY INSTITUTE (KOPTI)

13:00 D1-I-01 **Superthick Carbon-Based Hard Films Architecture by Plasma-Enhanced CVD** [Invited Lecture]

Liping Wang

STATE KEY LABORATORY OF SOLID LUBRICATION, LANZHOU INSTITUTE OF CHEMICAL PHYSICS, CHINESE ACADEMY OF SCIENCE

13:30 D1-O-05 **Atomistic Computational Simulations of Plasma-Enhanced Chemical Vapor Deposition Growth of Si-DLC:H Films**

Takuya Kuwahara, Hiroshi Ito, Yuji Higuchi, Nobuki Ozawa, Momoji Kubo

GRADUATE SCHOOL OF ENGINEERING, TOHOKU UNIVERSITY

13:45 D1-I-02 **Accurate Electron Collision Cross Sections and Transport Coefficients for Reliable Plasma Simulation** [Invited Lecture]

Kohki Satoh, Satoru Kawaguchi

DIVISION OF INFORMATION & ELECTRONIC ENGINEERING, GRADUATE SCHOOL OF ENGINEERING, MURORAN INSTITUTE OF TECHNOLOGY

14:15 D1-O-06 **Nitrogen-Assisted Heat Treatment of Steels Using Atmospheric-Pressure Plasma**
¹Ryuta Ichiki, ¹Takashi Inoue, ¹Masaki Mitani, ²Masashi Yoshida, ¹Shuichi Akamine, ¹Seiji Kanazawa
1 DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING, OITA UNIVERSITY
2 SHIZUOKA INSTITUTE OF SCIENCE AND TECHNOLOGY

14:30 D1-O-07 **Investigation of Thick Tetrahedral Amorphous Carbon Film Using FVAS**
Gi Taek Kim, Jong KuK Kim, Byoung Joon Kim, Sung Hun Lee, Seung Hun Lee, Yong Jin Kang, M.B.Jun
DEPARTMENT OF MATERIAL PROCESSING, KOREA INSTITUTE OF MATERIALS SCIENCE, PLASMA COATING

14:45 **Break**

Chair : Xingrui Deng (Nagoya University), Young-Jun Jang (Korea Photonics Technology Institute)

15:00 D1-I-03 **Multi-Physics Simulations on Growth and Tribology Processes of Diamond-Like Carbon Thin Films** [Invited Lecture]
Momoji Kubo
INSTITUTE FOR MATERIALS RESEARCH, TOHOKU UNIVERSITY

15:30 D1-I-04 **Super Low Friction Property of DLC Coating Lubricated with Environmentally Friendly Lubricants** [Invited Lecture]
¹Kentaro Yoshida, ¹Makoto Kano, ²Masabumi Masuko
1 MATERIAL ENGINEERING DIVISION, KANAGAWA INDUSTRIAL TECHNOLOGY CENTER
2 DEPARTMENT OF CHEMICAL ENGINEERING, TOKYO INSTITUTE OF TECHNOLOGY

16:00 D1-O-08 **Novel Low-Friction Hard Coatings for Increasing Energy Efficiency in Advanced Automobile Engines**
S.Y.Shin, B.H.Park, J.H.Sun, K.I.Moon
PLASMA ENHANCED TECHNOLOGY DEVELOPMENT TEAM, KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY

16:15 D1-O-09 **Fabrication of Large Area Tetrahedral Amorphous Carbon Films by Filtered Vacuum Multi Cathodic Arc**
¹Jong Kuk Kim, ¹Gi Taek Kim, ¹Seung Hun Lee, ¹Yong Jin Kang, ²Young Jun Jang
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2 ULTRA-PRECISION RESEARCH CENTER, KOREA PHOTONICS TECHNOLOGY INSTITUTE