

Special Issue

Towards Physical Simulations from Digitized Real-world Objects

Review

■ **Mechanical Simulation from Measured Data**

Masato TAKAMURA, Hideo YOKOTA and Akitake MAKINOUCI..... 1249

Lecture

■ **Recent Advances in Noise Reduction for Real-World-Objects** Shin YOSHIZAWA..... 1256

■ **Mesh Generation for Physical Simulations from CT Images** Yutaka OHTAKE..... 1260

■ **Finite Element Mesh Generation from Surface Meshes** Hiroaki DATE..... 1264

■ **The Process Construction and Practical Use Case from the Measurement Configuration to Analysis**

Kiyohide IMAEDA..... 1269

■ **Mechanical Modeling and Finite Element Analysis of Porous Cast Products**

N. ESMAEILI, J.L. ALVES and C. TEODOSIU..... 1273

■ **My Experience in Precision Engineering**

Masakazu MIYASHITA 1282

■ **Gravure & Interview**

QuaTouch Inc. Yukio UCHIDA/Yuichiro TERADA 1245

Interview : Yutaka OTAKE

■ **Introduction to Precision Engineering**

Ultrahigh Precision Cutting and the Applications 1278

Yutaka YAMAGATA

■ **Introduction of Laboratories**

Vehicle Mechanism Lab. TOYOTA CENTRAL R & D LABS., INC. 1283

Laboratory for Digital Systems and Environment, Division of Systems Science and Informatics Graduate School

of Information Science and Technology, Hokkaido University 1285

● **Awards**

JSPE Prize

JSPE Technology Award

JSPE Young Engineer Award ..following pages

● **Corporate Members** 1351

● **From the Lecture Committee** 告 12-1

● **Editor's Note** 告 12-13

Paper

- Development of Laser Spot Welded Stainless Steel Double Skin Panels for Rail Vehicle Body ————— 1287
—2nd Report, Study of Equivalent Rigidity Model of Stainless Steel Double Skin Panel—
Masashi OIKAWA, Yuichi YOSHIDA, Noriyuki SUZUKI, Katsuhiro MINAMIDA and Hiroyuki KUMEHARA
- Study on Improvement of Tool Life in High-Feed Milling by Nitrogen Blow Cutting Method ————— 1292
Hiroo SHIZUKA, Yasuo SUZUKI and Katsuhiko SAKAI
- Study on Precision Machining of Glass Lens Mold with Minute Structures ————— 1298
—Precision Machining of Glass Lens Mold with Fresnel Shape Applying Complex Machining Process—
Taichi FUJII, Minoru HIRANO, Tetsuro SHIBUKAWA, Tohru ISHIDA and Yoshimi TAKEUCHI
- Study on Reduction of Micro-Scratch in Oxide CMP for Multi-Level Interconnection ————— 1303
—Investigation of Mechanism for Micro-Scratch Formation in CMP Process—
Yohei YAMADA, Takahiro SUGAYA, Nobuhiro KONISHI, Shuhei KUROKAWA and Toshiro DOI
- Development of Virtual Machining Simulator by Using Voxel Model ————— 1308
Keiichi NAKAMOTO, Tomoyuki KOUNO, Tomo KOYAMA, Tatsuhiko SAKAGUCHI and Keiichi SHIRASE
- Development of Automatic Evaluation System for Working Surface of Super Abrasive Wheel (1st Report) ————— 1313
—Building of Automatic Image Processing Evaluation System for Whole Grinding Wheel Surface—
Heiji YASUI, Yusuke TANAKA, Kenji MARUO, Takahito KAMIYA and Ryusirou SAKAMOTO
- A Gait Analysis System Using Foot Path Images ————— 1318
Masahito ABE, Kazumi MASUDA, Susumu FURUKAWA and Shinji MUKAI
- Methods to Raise Skill Levels Using a New OJT System ————— 1325
Akihiro OBI, Takahiro YOTSUMOTO and Tohru IHARA
- Tool Path Generation for Five-Axis Controlled Machining with Consideration of Movable Range of Machine Tool and Tool Attitude Change ————— 1330
Yusuke FUJINO and Koichi MORISHIGE
- Estimation of Evaluation Function for Generating Upper Limb Posture during Task Execution ————— 1335
—Upper Limb Posture Evaluation Function for Connecting Plug—
Ohki KANEZASHI, Natsuki MIYATA, Tamio ARAI, Ryosuke CHIBA and Jun OTA
- Driving Ability Measurement System for Assessment of Older Driver Cognitive and Decision Performance in Driving School ————— 1341
Masahiro USHIDA, Masatake HIRAOKA, Tatsuomi NODA, Mikiko KAWASUMI, Katsumi MATSUDA, Osami YAMAMOTO, Muneo YAMADA, Tomoaki NAKANO and Shin YAMAMOTO
- Moving Characteristics in Bent Pipes of In-pipe Mobile Robot with Wheel Drive Mechanism using Planetary Gear Drive ————— 1346
Toyomi MIYAGAWA and Nobuyuki IWATSUKI