

**Special Issue**

## The Technology of Active Vibration Control and Its Application

**Review**

- Roles of an Active Anti-Vibration Apparatus in Precision Positioning Shinji WAKUI.....405

**Lecture**

- Active-Micro-Vibration-Control Technology for Precision Instruments  
Yasuyuki NOGUCHI.....410
- Active Damper Unit Driven by “RECIPROCATING-MOTOR”  
Yasushi MURAGISHI.....414
- Modular Vibration Isolation System Using Negative Stiffness  
Takeshi MIZUNO.....418
- Function and Characteristics of Accelerometers, for Active Vibration Control Technology  
Shuichi YAMAMOTO.....422
- Technology of Active Vibration Control for Railway Vehicles  
Katsuya TANIFUJI.....426
- My Experience in Precision Engineering  
Sansaku AOKI.....430
- Gravure & Interview  
MEIRITSU SEIKI CO., LTD. ....401  
Hajime TOHARA/Kenichi UMIYAMA/Masahiro SEKIBA/Makoto MURAYAMA  
Interview : Norio MASADA
- Introduction to Precision Engineering  
Motion Transmission by Gears—Transmission Error and Its Reduction— .....431  
Masaharu KOMORI
- Introduction of Laboratories  
Koshimizu Lab., School of Information Science and Technology, Chukyo University.....435  
Laboratory of Ultraprecision Engineering, Graduate School of Engineering, Nagoya University.....437

- From the Lecture Committee .....告 4-1
- Editor's Note .....告 4-13

## Contents

- Development of a Highly Accurate Ball Joint to Use Epoxy-Type Bond for Sliding Surface ————— 439  
Koyu ABE, Daisuke SATO and Masaru UCHIYAMA
- Chemical Etching of Copper Surface by Fluorescent Substance Excited with Ultraviolet Ray ————— 444  
—Study of Ultraviolet Ray-Assisted Machining—  
Yoshihiko CHIWAYA and Takeshi TANAKA
- Characteristics and Development of PP/VGCF Nano-composite Film with Highly Orientated Vapor Grown Carbon Nanofibers ————— 450  
Sung-Moo SONG, Koh-ichi SUGIMOTO, Takeshi MEGURO, Asahiko FUTAMURA, Morinobu ENDO and Masaki HANAOKA
- Development of Atmospheric Compensator to Reduce the Laser Measurement Error for Ultra-Precision Machine Tools ————— 455  
Kazutoshi ADACHI, Katsumi YAMAGUCHI, Hideki IWAI, Sakuro HONDA, Yuzo OKAWA and Shoichi SHIMADA
- Ultrasonically Assisted Machining for Mirror Finishing of Die (2nd report) ————— 460  
—Grinding Test with Self Electroplated Tool and Observation of Grinding Behavior—  
Keisuke HARA, Hiromi ISOBE, Hideo YOSHIHARA, Akira KYUSOJIN and Kazuhisa YANAGI
- Study on Friction Model of Linear Ball Guideway for Precision Positioning Control (2nd Report) ————— 465  
—Simulation of Full-closed Loop Control Using Bristle Model—  
Toshiharu TANAKA, Takaaki OIWA and Jiro OTSUKA
- Deposition of Homogeneous Amorphous Carbon Film at High Growth Rates by Vacuum Arc Deposition ————— 470  
Mutsumi HORIKOSHI and Atsushi HIRATA
- Analysis of Clutch Assembly with Dynamic Simulator ————— 475  
Hiromitsu FUJII, Natsuki YAMANOBÉ, Tamio ARAI, Atsushi WATANABE, Tetsuaki KATO, Takashi SATO and Kokoro HATANAKA
- A Study on Autonomous Layout Creation Function for Square-Arrayed Machining Cell System (1st Report) ————— 481  
—Layout Creation Function in Planning Stages—  
Toshiya KAIHARA, Susumu FUJII, Kentaro SASHIO and Satoko FUJIMOTO
- Study of Process Planning based on Feature Dependency of Manufacturing Features (1st Report) ————— 487  
—The representation of Feature Dependency and Basic Concept of Process Planning System—  
Takashi INOUE, Takeshi KISHINAMI and Fumiki TANAKA
- Output Force Distribution Characteristics of Limbs by Coordination of Mono-articular and Bi-articular muscles ————— 492  
—Difference from Output Force Distribution Characteristics by Joint Torque—  
Toru OSHIMA, Kiyoshi TORIUMI, Tomohiko FUJIKAWA and Minayori KUMAMOTO
- Optical Visualization Method for High Speed Tracking of a Transparent Floating Cell ————— 498  
Katsumi ISHIZAKI, Ichirou ISHIMARU, Makoto YOSHIDA and Toshiki YASOKAWA
- Backlash Compensation of Reduction Gears by Twin Motor Cooperative Control (1st Report) ————— 502  
—Study on Compensation Method using Backlash Model—  
Nobuyuki FURUYA, Hiroyasu TOBA, Takayoshi OGURI and Akira MASHIMA