The 8th Asia-Pacific Symposium on Applied Electromagnetics and Mechanics (APSAEM14)

TECHNICAL PROGRAMME AT A GLANCE

July 22 – 24, 2014

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<th>Date</th>
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<tr>
<td>22 July</td>
<td>19:00-23:00</td>
<td>Welcome reception (cocktail)</td>
<td>Lebledor (台中金色三麥誠品店)</td>
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<tr>
<td>(Tue.)</td>
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<tr>
<td>23 July</td>
<td>08:00-09:00</td>
<td>Registration</td>
<td>Building Hall (1F)</td>
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<td>(Wed.)</td>
<td>09:00-09:25</td>
<td>Plenary session</td>
<td>Auditorium 106 (1F)</td>
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<td>09:25-10:10</td>
<td>Key note I/ Chair: XXXXXXXXXXXXX</td>
<td>Magnetically suspended artificial heart</td>
<td>Auditorium 106 (1F)</td>
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<td></td>
<td></td>
<td>Prof. T. Masuzawa, Ibaraki University, Japan</td>
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<td>10:10-11:00</td>
<td>Coffee break</td>
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<td>11:00-12:30</td>
<td>Section A (106)/ Chair: XXXXXXXXXXXXX</td>
<td>Computational electromagnetic, Characterization and modeling of electromagnetic materials</td>
<td>Section B (101) / Chair: XXXXXXXXXXXXX, Magnetic sensors and measurement, Nondestructive testing</td>
</tr>
<tr>
<td>1-1</td>
<td>Quasi-Analytical Approach to the Resonance Phenomenon</td>
<td>IWANAGA, Renya; MARINOVA, Iliana; SAITO, Yoshifuru</td>
<td></td>
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<tr>
<td>1-2</td>
<td>From Galilean covariance to Maxwell equations: Back to the quasi-static regimes</td>
<td>MAZAURIC, Vincent</td>
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<tr>
<td>4-1</td>
<td>High-Tc SQUID based NMR and MRI in microtesla fields</td>
<td>LIAO, Shu-Hsien; WANG, Ming-Wei; CHEN, Hsien-Hsien; CHIEH, Jen-Je; YANG, Hong-Chang; HORNG, Herng-E</td>
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<tr>
<td>4-2</td>
<td>EXAMINATION OF OSCILLATION FREQUENCY TO REDUCE CHANGE IN THE SENSITIVITY OF AN EDDY-CURRENT DISPLACEMENT SENSOR DUE TO COAXIAL CABLE TORSION</td>
<td>SHIMOJIMA, Yoshifumi; OMURA, Kohei; BU, Yinggang; MIZUNO, Tsutomu</td>
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<td>Time</td>
<td>Session/Presenter/Title</td>
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<td>13:00-14:30</td>
<td>Lunch Building Hall (1F)</td>
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| 13:45-15:20 | Section C (106)/ Chair: XXXXXXXXXXXXXX
Electromagnetic and electromechanical devices and systems |
| 14:30-15:20 | Coffee break Building Hall (1F)                                                          |
| 15:20-16:50 | Section D (101)/ Chair: XXXXXXXXXXXXXX
Power electronics and drive systems, Electromagnetic compatibility (EMC), MEMS |
| 8:00       | 1-3 Vector Magnetic Characteristic Analysis by using Complex E&S Model taking account of Stress Effect
ANDO, Hayato; KAI, Yuichiro; ENOKIZONO, Masato |
| 8:45       | 1-1 Evaluation of the Material Degradation of Austenitic Stainless Steel under Pulsating Tension Stress Using Magnetic Methods
MOHACHIRO, Oka; TERUTOSHI, Yakushiji; MASATO, Enokizono |
| 9:00       | 3-1 Stress-Frequency Characteristics of the Complex permeability
NEMORI, Hideaki; MARINOVA, Iliana; SAITO, Yoshifuru |
| 10:30      | 5-1 Defect Searching in the Curved Surface by the Film
MARUYAMA, Kouki; MARINOVA, Iliana; SAITO, Yoshifuru |
| 11:00      | 3-2 Fourier Modeling of the Ferromagnetic Characteristics
WAKUDA, Kyosuke; MARINOVA, Iliana; SAITO, Yoshifuru |
| 11:30      | 5-2 First Order Frequency Fluctuation Analysis of the Barkhausen Signals
NISHIYAMA, Yuki; MARINOVA, Iliana; SAITO, Yoshifuru |
| 12:00      | 3-3 Two-dimensional Magnetostriction under Vector Magnetic Characteristic
WAKABAYASHI, Daisuke; ENOKIZONO, Masato |
| 12:30      | 5-3 A Study on Backside defect searching by Low Frequency Excitation of the ∞coil
HAMANAKA, Shunichi; MARINOVE, Iliana; OIKAWA, Yoshiro; SAITO, Yoshifuru |
| 14:30      | 8-1 A Control Method for Vertical Axis Wind Turbine based-PMSG
MORINAGA, Shuta; IKEMA, Hiroki; |
| 15:00      | 7-1 Fabrication of magnet actuatable patterned array of Au-Ni coaxial nanorods
HSU, Che-Wei; WANG, Gou-Jen |
| 17:00      | 7-2 Fabrication of magnet actuatable patterned array of Au-Ni coaxial nanorods
HSU, Che-Wei; WANG, Gou-Jen |
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<td>8-2</td>
<td>Improvement Efficiency and Miniaturization of Bone Conduction Speaker</td>
<td>YOSHIKAWA, Koya; KITAGAWA, Wataru; TAKEHITA, Takaharu</td>
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<td>8-3</td>
<td>Analysis Method for Ni-Mn-Ga Magnetic Shape Memory Alloy Linear Actuator Using Play Hysteresis Operator</td>
<td>MATSUNAGA, Kensuke; NIGUCHI, Noboru; HIRATA, Katsuhiro</td>
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<td>8-4</td>
<td>Optimal Design of High-Performance and Low Magnet Usage Surface Mounted Brushless Permanent Magnet Motors</td>
<td>HWANG, Chang-Chou; CHANG, Chia-Ming; CHAN, Chien-Hang</td>
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<td>8-5</td>
<td>3-D Finite Element Analysis of a DC Electromagnet in Releasing Operation</td>
<td>KAWASE, Yoshihiro; YAMAGUCHI, Tadashi; OTANI, Yuki; TAKEMOTO, Takanori</td>
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<td>8-6</td>
<td>Leakage flux recovery coil for energy harvesting using magnetoplated wire</td>
<td>YAMAMOTO, Tatsuya; BU, Yinggang; MIZUNO, Tsutomu</td>
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**Events:**
- **18:00-20:30:** Photo/Banquet
- **24 July (Thu.) 08:00-09:00:** Registration
- **09:00-10:15:** Section E (106)/ Chair: XXXXXXXXXXXX Electromagnetic compatibility (EMC), Applications of
- **Section F (101)/ Chair: XXXXXXXXXXXX** Applications in telecommunication, Magnetic fluid I
| 13-1 | A software-related IC-EMI Estimation Tool for Microcontroller  
YUAN, Shih-Yi; LIN, Kuo-Chih | 16-1 | MIMO Beamforming System over 3D Channel  
CHEN, Joy Iong-Zong |
|---|---|---|---|
| 14-1 | Development of an Internal Induction Needle Heating System for Hyperthermia Applications  
BUI, Huy-Tien; HWANG, Sheng-Jye | 18-1 | Generating High Affinity Aptamer by Using Magnetic Particles  
LAI, Ji-Ching; HONG, Chin-Yih |
| 14-2 | Estimation of crural muscles states by multipoint mechanomyogram measurement  
IKEDA, Shohei; ARAI, Tatsuya; OKUYAMA, Takeshi; TANAKA, Mami | 18-2 | Simulations of Magnetic Microchain and Magnetic Microswimmer by using Hybrid Lattice Boltzmann Method  
TSUTSUMI, Hiroaki; SUMIYOSHI, Hirotaka; IDO, Yasushi; CHEN, Ching-Yao |
| 14-3 | LAB-ON-CHIP SYSTEM COMBINED OPTICAL TWEEZERS AND DIELECTROPHORESIS  
MIZUTA, Yoshihiro; TAGUCHI, Kozo | 18-3 | DAMPING FORCE OF A DAMPER UTILIZING MR FLUIDS CONTAINING NEEDLE-LIKE PARTICLES  
YOKOYAMA, Hiroki; IDO, Yasushi; TOBITA, Shunsuke; HAYASHI, Koichi |
| 14-4 | Femtosecond Fiber Laser Applying for Cell Fusion  
NGUYEN DANG, Trang; MIZUTA, Yoshihiro; TAGUCHI, Kozo | 18-4 | EFFECT OF MAGNETIC FIELD DIRECTION ON FORCED CONVECTIVE HEAT TRANSFER OF MAGNETIC FLUID  
MOTOZAWA, Masaaki; KINO, Kyoei; SAWADA, Tatsuo; KAWAGUCHI, Yasuo; FUKUTA, Mitsuhiro |

| 10:15-11:00 | Coffee break | Building Hall (1F) |
| 11:10-12:25 | Section G (106)/ Chair: XXXXXXXXXXXXX  
Magnetic fluid II, Electromagnetics and electromechanical education | Section H (101)/ Chair: XXXXXXXXXXXXX  
Miscellaneous |
| 18-5 | Boiling Heat Transfer Characteristics of Binary Magnetic Fluid Under Non-uniform Magnetic field  
YAMASAKI, Haruhiko | 19-1 | Frequency response of polymer sensor for measuring finger scratching motion  
OKUYAMA, Takeshi; HATAKEYAMA, Kazuki; TANAKA, Mami |
| 18-6 | Anisotropic Thermal Conductivity of Ferrofluid under Magnetic Field  
YOSHIOKA, Atsushi; IWAMOTO, Yuhiro; IDO, Yasushi; YAMAGUCHI, Hiroshi | 19-2 | Influence of Installation Angle of a Damper Using a Magnetic Particle Assemblage on Damping Force under Applied Magnetic Field  
KAWAMOTO, Ryusuke; IDO, Yasushi; HAYASHI, |
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<td>12:25-13:30</td>
<td>Lunch (lunch box)</td>
<td>Building Hall (IF)</td>
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<td>13:30-15:00</td>
<td>Section I (106)/ Chair: XXXXXXXXXXXXXXXXX</td>
<td>Electromagnetic actuator and applications of permanent magnet I</td>
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<tr>
<td>9-1</td>
<td>Reduction in rolling tilt of objective lens actuators</td>
<td>KIMURA, Katsuhiko; SAITO, Hidenao; SUGIURA, Toshihiko</td>
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<td></td>
<td>for optical disc drives</td>
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<td>9-2</td>
<td>POWER MAPPING CHARACTERISTIC OF</td>
<td>MISRON, Norhisam</td>
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<td>DOUBLE STATOR PERMANENT MAGNET</td>
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<td>9-3</td>
<td>PERFORMANCE COMPARISON OF</td>
<td>RAJA OTHMAN, Raja Nor Firdaus</td>
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<td></td>
<td>CONVENTIONAL SPOKE AND HOLLOW-ROTOR PERMANENT MAGNET</td>
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<td>GENERATOR FOR SMALL ENERGY HARVESTING APPLICATION</td>
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<td>9-4</td>
<td>Dynamic Characteristic Analysis and Experimental</td>
<td>RAJA OTHMAN, Raja Nor Firdaus</td>
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<td>Verification of 2-DoF Resonant Actuator under Feedback</td>
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<td>9-7</td>
<td>Characteristics Comparison of Permanent-Magnet-Type</td>
<td>NIGUCHI, Noboru; HIRATA, Katsuhiko; MORIMOTO, Eiki; OHNO, Yuki</td>
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<td>Magnetic-Geared Motors</td>
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<td>9-8</td>
<td>STUDY ON SURFACE PERMANENT MAGNET GEAR WITH STACKABLE</td>
<td>KUROIWA, Shota; ANDO, Yoshinori; MURAKAMI, Iwanori</td>
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<td>STRUCTURE</td>
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<td>9-9</td>
<td>Shape Optimization for Magnet and Flux Barriers of</td>
<td>ISHIKAWA, Kota; KITAGAWA, Wataru; TAKESHITA, Takaharu</td>
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<td>IPMSM by using Polygon Model Method with GP</td>
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<td>9-10</td>
<td>Development of Variable Rate Spring by Permanent</td>
<td>MURAKAMI, Iwanori; OCHIAI, Hiroto</td>
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<td>Magnet with Flux Concentration Method</td>
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<td>Time</td>
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<td>9-5</td>
<td>Radial Differential Magnetic Harmonic Gear</td>
<td>OHNO, Yuki; HIRATA, Katsuhiro; NIGUCHI, Noboru; MORIMOTO, Eiki</td>
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<td>9-6</td>
<td>Experimental Evaluation of New Magnetic Movement Converter for Linear Oscillatory Actuator</td>
<td>KITAYAMA, Fumiya; HIRATA, Katsuhiro; NIGUCHI, Noboru; YAMADA, Tatsuro</td>
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<td>9-11</td>
<td>Utilization of permanent magnet in Helmholtz coil for dynamic viscoelasticity measurement</td>
<td>WANG, Yunche; KO, Chih-Chin; SHIAU, Li-Ming</td>
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<td>9-12</td>
<td>Generator Characteristics of an Interior Permanent Magnet Machine Designed by a Topology Optimization with GA Considering Cluster of Materials</td>
<td>ISHIKAWA, Takeo</td>
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<td>Coffee break/ Poster session</td>
<td>Building Hall (1F)</td>
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<td>15:50-17:00</td>
<td>Poster session</td>
<td>Building Hall (1F)</td>
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<td>17:00-17:20</td>
<td>Closing Ceremony</td>
<td>Auditorium 106 (1F)</td>
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<td>25 July (Fri.) 06:30-20:00</td>
<td>Technical tour</td>
<td>Building Hall (1F)</td>
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Each presentation is 12 minutes and the Q&A is 3 minutes. The computer and the projector are provided in the auditoriums.
Poster section

Building Hall (1F) / (15:00-17:00, 24, July)

1-4  A Study of Electrical Loss in Reactors by the Magnetic Field Analysis
     Mr. SAWADA, Masashi; TAMIYA, Tomoaki; SHINDO, Yuji; KAWASE, Yoshihiro; YAMAGUCHI, Tadashi; KATAGIRI, Hirokatsu; SAKURAGI, Takuya

1-5  Improvement of Convergence Behavior to Steady-State in Magnetic Field Analysis of Synchronous Motor
     KARAGIRI, Hirokatsu; KAWASE, Yoshihiro; YAMAGUCHI, Tadashi; OTANI, Yuki

1-6  PERFORMANCE ANALYSIS OF A CYLINDRICAL HALL THRUSTER
     Yen-Sen Chen, Luke Yang

4-3  Methodology of Measuring Minute Remanence up to Submicron Tesla Level
     MINAMITANI, Tamotsu; WAKAURA, Dai; YAMADA, Sotoshi

4-4  Evaluation of pickup coil for near magnetic field detection with 20 mm spatial resolution
     YAMAMOTO, Takahiro; TASHIRO, Kunihisa; WAKIWAKA, Hiroyuki

6-1  Influence of Stress-Relief Annealing on Magnetic Properties of Motor Cores by using a Induced Current Heating Method
     KAI, Yuichiro; SHOGO, Yoshida; ENOKIZONO, Masato
7-2 PH Sensing Using Modified Silicon Nanowire Field Effect Transistors
    TSAI, Yi-Chin

7-3 Dynamics of a Superparamagnetic Bead Chain in an Oscillating Field
    LI, Yan-Hom; LIN, He-Chin; CHEN, Ching-Yao

7-4 Fabrication of optical compound film with imprinting and UV laser direct writing process
    PAN, Cheng-Tang; CHEN, Yi-Chian; LIN, Po-Hung; HSIEH, Chi-Chang; TSUNG-LIN, Yang; LIN, Yu-Ru; WANG, Shao-Yu; CHIU, Chen-Chih; WU, Yu-Jhih; Mr. SIE, Wei-Ting

7-5 Fabricate Zinc Oxide Piezoelectric Nanorods by Electrospaying Method with Hydrothermal Process
    PAN, Cheng-Tang; HSIEH, Chi-Chang; WANG, Shao-Yu; CHEN, Yi-Chian; HUNG, Kun-Hao; LIU, Zong-Hsin; YEN, Chung-Kun; WANG, Wei-Chuan; JHANG, Yu-Chang

7-6 Electrospun PVDF Fibers Using Multi-spinnerets
    HSIEH, Chi-Chang; CIOU, Fong-Yi; PAN, Cheng-Tang; YEN, Chung-Kun; LIN, Yan-Liang; WANG, Bo-Sheng; LI, Yan-Huei; CHEN, Chin-Wei

7-7 Fabrication technology research of nickel nozzle plate for micro nebulizer
    JIAN, Yunshan

7-8 RESEARCH AND ANALYSIS ON PIEZOELECTRIC PROPERTIES OF NEAR-FIELD ELECTROSPINNING PVDF NANOFIBER
    HSIEH, Chi-Chang; WANG, Bo-Sheng; PAN, Cheng-Tang; YEN, Chung-Kun; LIU, Zong-Hsin; LAI, Hao-Wei; CIOU, Fong-Yi; LI,
7-9 THE APPLICATION OF OPTIMAL SILVER NANOWIRES TO CONDUCTIVE FILM
HSIEH, Chi-Chang; YANG, Tsung-Lin; PAN, Cheng-Tang; WU, I-Chou; CHEN, Yi-Chian; HUNG, Kun-Hao; LIN, Yu-Ru; CHIU, Chen-Chih; LIN, Po-Hung; SIE, Hong-Ming

8-7 A hydrostatic bearing test system for the determination of viscous properties of magnetic-fluid lubricants
WENG, Huei Chu; CHEN, Lu-Yu

8-8 Cogging Reduction of a Low-speed Direct-drive Axial-gap Generator
HASHIMOTO, Tomoki; TODAKA, Takashi; SATO, Takeru; SHIMOJI, Hiroyasu

8-9 Study of Parallel Synchronous Drive Method of Permanent Magnet Linear Synchronous Motor
SUZUKI, Kenji; UTIYAMA, Kou; PIAO, He; DOHMEKI, Hideo

8-10 Peel force of Electrostatic Adhesion in Crawler-type Electrostatic Climbing Robots
WANG, Hongqiang; YAMAMOTO, Akio

8-11 Numerical Investigation of Pulsed Dual-Frequency Argon Capacitively Coupled Plasma
WANG, Ting-Hao; CHIOU, Chuei-Ching; GU, Bi-Ren; HUNG, Chieh-Tsan; WU, Jong-Shinn

9-13 Study on Sensorless Load Estimation Method for Linear Resonant Actuator Using Disturbance Compensation Control
ASAI, Yasuyoshi; KATO, Masayuki; HIRATA, Katsuhiro; OTA, Tomohiro
9-14 3-D Finite Element Analysis of A.C. Electromagnetic Pump with Diode Rectifier
KAWASE, Yoshihiro; YAMAGUCHI, Tadashi; MORI, Kazuma

9-15 Examination of the primary coil corresponding to the capsule endoscope
KAWAI, Tatsuya; WATADA, Masaya

9-16 A study of an electromagnetic energy harvester device with negative magnetic spring characteristics
BU, Yinggang; INOUE, Kaname; MIZUNO, Tsutomu

9-17 Performance comparison of torque and efficiency of SRM based on structure of slot
SUGIMOTO, Kei; DOHMEKI, Hideo; SUZUKI, Kenji

10-2 Effective Inductance and Loss of a Small Coil for Implantable Devices
NAGOSHI, Ryohei; OGA, Satohiro; MATSUI, Daigo; SHIMATANI, Yuichi; KIRYU, Shogo

10-3 Effects of Variability in Resonant Frequencies on Load Current and Efficiency of a Resonance-Based Wireless Power Transfer Circuit
YASUIKE, Yuko; AKIYAMA, Misato; SHIMATANI, Yuichi; KIRYU, Shogo

10-4 Effects of stray Capacitances in Resistive Voltage Dividers on Electric Power Measurements Frequency Range up to 1 MHz
AKIYAMA, Misato; MATSUMAE, Shiina; KIRYU, Shogo
11-4 Transport experiment of automatic gantry crane operation by linear induction motor
MATSUMORI, Kazuki; NAKAGAWA, Toshiko

14-5 Double-Pancake Exciting Coils with Back Yoke for Magnetic Field Generating Generator for Medical Treatments
YAMADA, Sotoshi; IKEHATA, Yoshio; HAYASHI, Ryouhei; UENO, Toshiyuki

14-6 Effect of Magnetic Fields on Potency of Anticancer Drug Cisplatin in Human Cancer Cell Line
KAKIKAWA, Makiko; USHIMARU, Toru; YAMADA, Sotoshi

14-7 METAL COATED CHEMICALLY ETCHED FIBER PROBE FOR SINGLE CELL MANIPULATION AND ISOLATION
TAGUCHI, Kozo; KIDO, Ryo; MIZUTA, Yoshihiro

14-8 CELLULAR TEMPERATURE MEASUREMENT BY DIELECTROPHORESIS
KIDO, Ryo; TAGUCHI, Kozo

14-9 Enhancement of Radical Generation in Round Helium-Based Atmospheric-Pressure Plasma Jet Using Various Electrode Arrangements and Their Application in Sterilization
WU, Jong-Shinn; LIU, Chih-Tung; WU, Ching-Jung; YANG, Yi-Wei; LIN, Zhi-Hua

14-10 Development of Temporal Multiscale Algorithm in Plasma Fluid Modeling: One-Dimensional Validation
GU, Bi-Ren; CHIOU, Chuei-Ching; HU, Meng-Hua; HUNG, Chieh-Tsan; LIN, Kun-Mo; WU, Jong-Shinn

18-8 Dual-Imaging Scanning SQUID Biosusceptometry for Locations of Tumors Targeted by Magnetic Nanoparticles
18-9 Novel Planetary Motions of Ferrodrops in a Rotating Magnetic Field
CHEN, Ching-Yao; HSUEH, Hao-Chung

19-6 Investigations on dynamic mechanical properties of reactive diluent addition and nano-silica doped epoxy composites
CHANG, Huey-Ling; CHEN, Chih-Ming

19-7 Friction Characteristics for Clasp Locked Precision Locknuts
CHEN, Chih-Ming; LIN, Gao-Min

19-8 Crack Effects on the Dynamic Behavior of Orthotropic Composite Pre-Twisted Blades
HSU, MING-HUNG

19-9 Nitric oxide concentration in blood and blood pressure in rats are affected by the distance of atmospheric plasma inhalation
Takahashi, Genu; Tsutsui, Chihiro; Mori, Akira; Watada, Masaya; Hirata, Takamichi

19-10 Examination of the waveform processing method in monitor equipment of ECG in daily life for infants
Toyoshima, Minori; Mori, Akira; Watada, Masaya

19-11 Operation Verification of the Sensing Device for Operation Force in Surgical Assisted System
Matsuo, Takafumi; Watada, Masaya
19-12 Development of Wheelchairs Going up High Curbs
KONDO, HIROTO; WATADA, MASAYA

19-13 Examination of the automatic detection method of a breast cancer using an ultrasonographic image
MIYAZAKI, Masato; MORI, Akira; WATADA, Masaya

19-14 Adopting Hydrophobic Interaction between Molecular Probes and Gold Nanoparticles for Tuberculosis Diagnosis
SHEN, Shu-Wei

19-15 Dynamics analysis of cycloidal speed reducers with two-stage design
HSIEH, Chiu-Fan; JIAN, Wun Si