

**BULLETIN OF TOKYO METROPOLITAN
INDUSTRIAL TECHNOLOGY RESEARCH INSTITUTE**

NO.8 2013

Papers

- Development of an outlier reduction filter
Yasuaki Kaneda, Yasuharu Irizuki 2
- Multi layer control applied middle-routing node in wireless sensor network
Yoshitsugu Nakagawa, Yasuharu Irizuki, Takashi Yamaguchi 6
- Development of harmful birds recognition in video
Norihiro Ohira, Shinichi Tomiyama, Kazushi Miyatake, Yuka Hirai, Rieko Inuzuka 10
- Friction characteristics of DLC coated rubber used AISI 52100 steel under un-lubricated condition
Kenta Nakamura, Katsuyuki Fujimura, Masayoshi Muraki 14
- Strength and ductility properties of sintered magnesium due to addition of elemental powder
Taku Iwaoka, Masayuki Aonuma, Yoshikazu Teranishi, Kazuo Morikawa 18
- Improvement of diamond tool life in ultra precision cutting of mold steel
Kengo Fujimaki, Yasuyuki Hirano, Tsuyoshi Yokosawa 22
- Developing a new LED luminaire for improved color appearance
Toshihide Iwanaga, Hirotaka Nakamura, Shigeru Ichihara,
Toshiyuki Yamashita, Akio Shimokawa, Masami Ishihara 26
- Mechanical properties of poly (butylene succinate) composites using banana fiber
Tetsuto Kajiyama, Takeshi Yasuda, Kenichi Shimizu, Kose Hayashi 30
- Commercial production of noble-metal-free Co, Ce oxide catalyst and energy saving odor
elimination system
Shouichi Somekawa, Jun Inoue, Atsushi Mizukoshi, Toshiya Hagiwara,
Kyoko Hujii, Masayuki Kojima, Tsutomu Shinoda 34

Determination of ETBE contents in red-dyed gasoline by liquid scintillation counting	Shunji Yunoki, Masaaki Saito, Yoshiyasu Nagakawa	38
Detection of gamma ray irradiated glucosamine-based tablets	Masayuki Sekiguchi, Seiko Nakagawa, Shunji Yunoki, Yoshimi Ohyabu	42
Development of a method for detecting bio-based polyethylene pellets	Yoshiyasu Nagakawa, Shunji Yunoki, Masaaki Saito	46
Controlled release of antibacterial agents from PVA hydrogel as a wound dressing	Shunji Yunoki, Masushi Kohta, Yoshimi Ohyabu, Takabumi Kubo, Masayuki Sekiguchi, Tetsuji Iwasaki	50
Sensing system for volatile organic compounds (VOC)	Akira Monkawa, Tomoe Nakagawa, Hirokazu Sugimori, Erito Kazawa, Takashi Takei, Masatake Haruta	54
Simultaneous determination of elemental composition in small solid samples by femtosecond LA-ICP-TOFMS	Hideo Hayashi, Aya Shimizu	58
Development of simple check gauge for a Coordinate Measuring Machine	Shoichi Nakanishi, Shinji Nishimura, Hiroshi Nakamura, Eiichi Higuchi, Takeshi Konishi, Satoshi Kobune	62
The study of small-scale energy-saving apparatus harmonized with the living environment. (An device with improved harmonics and power factor was developed for use as a home electrical appliance.)	Kazumasa Mikami, Takeshi Kobayashi, Kohei Fujiwara, Toshihisa Shimizu, Keiji Wada	66
Influence of part-build orientation on mechanical properties of resin plates built by SLS	Takashi Kigure, Yukio Yokoyama, Yuki Yamauchi, Toshiyuki Yamanaka	72
Fabrication and Evaluation of CFRP Loop-Spring	Yasuhiro Nishikawa, Hiroyasu Sano, Satoshi Kobune	76
Development of low power protocol based on remote sensing conditions	Masashi Nakamura, Yuji Takeda	80

Effect of cotton bleaching using ozone micro-bubbles	Ichiro Enomoto, Koji Takeda, Risa Nagao, Shin Soeda, Yukinori Hoshi, Yoshiro Takahashi, Ryoiti Shibuya, Fumi Masuko, Chizuru Mitani	84
Basic study on issue of change of color of the black lacquer film -Surface change due to the ultraviolet irradiation of the reacted black lacquer with iron-	Yoshimi Kamiya, Shinji Nishimura	88
Notes		
Development of low power system for fpgas using asynchronous circuit design	Tadashi Okabe, Yasuharu Irizuki, Yasuaki Kaneda	96
Development of the LSPR sensor head	Elito Kazawa, Masaki Wakabayashi	98
Development and evaluation of the stability gas electron multiplier	Kazuki Komiya, Kohei Fujiwara, Takeshi Kobayashi	100
Development of evaluation method for a wave absorber in microwave	Kohei Fujiwara, Takumi Shimizu, Takeshi kobayashi	102
Active vibration control of rectangular plate using piezoelectric ceramics	Ryoji Fukuda	104
Motion control with robotic technology middleware on embedded system - application to a model rotorcraft	Akinori Sasaki, Shigenobu Shimada	106
Investigation of solidification morphologies used on organic materials	Shinji Nishimura	108
Improvement of reliability in joint interface between stainless steel and dissimilar metal by YAG laser welding	Masayuki Aonuma, Taku Iwaoka, Yoshikazu Teranishi, Kazuo Morikawa	110
Development of aligned tissue evaluation method using optical techniques	Mizue Ebisawa	112

Development of stability evaluation method and monitoring system in total luminous flux measurement	Takayuki Shibuya, Toshihide Iwanaga, Hiroyuki Yokota	114
Development of compact goniophotometer for flat panel light source	Hiroyuki Yokota, Toshihide Iwanaga, Takayuki Shibuya	116
The difference of the sound reduction index by the difference of the sample area	Shigeyuki Watanabe, Koichi Kanda, Asobu Hattori, Keiko Nishizawa	118
An application of painting technology to the coloring of models made with selective laser sintering	Akiyoshi Onozawa, Madoka Murai, Yoshimi Kamiya, Toshio Kinoshita, Yuki Yamauchi	120
Effect of ion implantation on carbon and restoration after annealing	Yoshikazu Teranishi, Tomotaro Watanabe, Hiroshi Nagasaka, Atsushi Mitsuo, Yasuhiro Tanabe	122
Development of ball-type $\text{Co}_3\text{O}_4\text{-CeO}_2$ catalysts	Jun Inoue, Shoichi Somekawa, Atsushi Mizukoshi, Toshiya Hagiwara, Tsutomu Shinoda, Hiroyuki Fujiwara, Yoshimasa Kawami, Kenji Mitsuhashi, Tokufumi Nagatomi	124
Improvement of strength properties of non-combustible magnesium alloy	Yasuto Fujimaki, Seiji Koganei, Yuji Kobayashi, Toshiya Tsuji, Masahiko Jin, Akio Motoi	126
The antifungal properties of biocontrol agents for moulds inhabiting woods	Takahiko Iida, Rumi Konuma, Atushi Mizukoshi, Tomoko Hamano, Kensuke Kawarada	128
High precision analysis of chlorine contained in wasted woods in tsunami stricken areas	Eri Ando, Yasuhiko Takuma, Hirokazu Sugimori, Yutaka Arakawa, Kensuke Kawarada	130
Application of Material Flow Cost Accounting (MFCA) as a support tool for environmental management to a medium-sized company	Atsushi Mizukoshi, Kensuke Kawarada, Hiroo Tai, Hideki Kobayashi, Mitsu Fujimori, Akira Shimogaki, Yasuo Anjo	132
ACopolymerization of styrene with maleimide induced by irradiation with a low-energy electron beam	Seiko Nakagawa, Masayuki Sekiguchi, Shunji Yunoki	134

Estimation of relative reaction rate of hydroxyl radical using spin-trapping ESR combined with wavelength-selected photolysis	Seiko Nakagawa, Masayuki Sekiguchi	136
EMF changes of the type R thermocouples in high temperature	Haruhiko Numajiri, Masashi Sasaki, Hiromasa Mizuno	138
Interactive software development using Functional Programming Language - example of simple whole body motion analysis -	Ryuta Atohama	140
Optimization of precise analysis methods of brominated flame retardants (PBB · PBDE) in plastic products	Naori Sasaki, Ryoji Nakazawa, Mami Tanaka, Atsushi Mizukoshi	142
Development of a knitted insect control net for agriculture with a very fine mesh	Yusuke Karaki, Akira Horie	144
Development of garment removable without attendants	Akihiro Hirayama, Takashi Kato, Yukiko Tukuda, Akiko Suzuki	146
Development of energy saving system using a light control system for straight-type LED lamp	Ken Satoh, Hiroyasu Sano, Shiroh Shirai, Noriyuki Sumi	148
Nitrogen oxide accelerating test using a gas cylinder	Akiko Okada, Takako Koshihara	150
Development of water-repellent finishing by graft polymerization	Ichiro Enomoto, Shigetoshi Ikeda, Hideto Suzuki, Yoneho Tabata, Tomoya Oshima, Kazuo Yamaguchi	152
Radioactive waste sintered with CRT glass	Hidemi Koyama, Kazuhiko Hirai, Saori Ikeda, Noboru Sakurai, Yoshiyasu Nagakawa, Tatsuo Okazawa, Shimaji Hideo, Tahata Hironari	154
Development of low environmental load electroplating	Kazunari Mizumoto, Eiiti Henmi, Kazuhiko Hirai, Shohta Takemura, Kaori Urasaki, Toshio Ookawara	156

Development of the rubber packing for water pipes using stratified mineral	
Taiki Tobusawa, Kenichi Shimizu, Akira Kanno, Toshio Honda	158

Evaluation of the ease to knit for the knitting needles by using a tension tester	
Akira Horie, Yusuke Karaki, Masahiro Kawaguchi	160

Abstracts other published papers and presented at society meeting

Papers	165
Presentations	171
Poster	179
Review	183