

***Program of
The Seventh International Workshop on
Green Composites***

IWGC-7

August 28-30, 2012

**SUZUKI Guesthouse in Grand Hotel Hamamatsu
Hamamatsu, Shizuoka, Japan**

Organized by

JSMS Committee on Composite Materials, The Society of Material Science, Japan

Sponsored by

SUZUKI Motor Corporation

Research Foundation for the Electrotechnology of Chubu

Faculty of Engineering, Shizuoka University

Wood Plastic Composite Research Committee, Wood Technological Association of Japan

Hamamatsu Visitors & Convention Bureau

Outline of IWGC-7

August 28 (Tuesday)

13:00-19:00	Registration (Grand Hotel Hamamatsu)
15:00-17:00	Industrial Tour (Yamaha Livingtech Corporation)
17:30-19:00	Welcome Reception (Grand Hotel Hamamatsu)

August 29 (Wednesday)

9:00	Registration
9:30	Opening Ceremony
9:45-10:30	Oral Session I: Nano Composites 1
10:30-10:45	Coffee & Tea Break
10:45-12:00	Oral Session II: Processing and Application
12:00-13:00	Lunch / Committee Meeting
13:00-14:00	Poster Session I
14:00-15:30	Special Session: <i>Industrialization of green composites: The Challenges and Opportunities</i>
15:30-15:45	Coffee & Tea Break
15:45-17:00	Oral Session III: Mechanical and Thermal Properties
18:30-20:30	Banquet ("The Ocean" near Hamana Lake)

August 30 (Thursday)

9:00	Registration
9:30-10:45	Oral Session IV: Nano Composites 2
10:45-11:00	Coffee & Tea Break
11:00-12:00	Oral Session V: Interface
12:00-13:00	Lunch
13:00-14:00	Poster Session II
14:00-15:30	Oral Session VI: Eco-friendly Materials and Technology
15:30-15:45	Coffee & Tea Break
15:45-17:00	Oral Session VII: Performance
17:00-17:10	Closing Remarks

Time Table of IWGC-7

Aug.28 (Tue)		Aug.29 (Wed)		Aug.30 (Thr)		
		Time	Session	Time	Session	
		9:00	Registration	9:00	Registration	
		9:30	Opening ceremony	9:30	Oral session IV "Nano Composites 2"	
		9:45	Oral session I "Nano Composites 1"	9:45		
		10:00		10:00		
		10:15		10:15		
		10:30	<i>Break</i>	10:30	10:30	
		10:45	Oral session II "Processing and Application"	10:45	<i>Break</i>	
		11:00		11:00	Oral session V "Interface"	
		11:15		11:15		
		11:30		11:30		
		11:45	11:45	11:45	11:45	
		12:00	<i>Lunch/Committee meeting</i>	12:00	<i>Lunch</i>	
13:00	Registraion desk opens at 1st floor of Grand Hotel Hamamatsu.	13:00	Poster session I including 1-minute short presentation	13:00	Poster session II including 1-minute short presentation	
14:00	Tour Bus departure from Hamamatsu station	14:00	Special session "Industrialization of green composites"	14:00	Oral session VI "Eco-friendly Materials and Technology"	
				14:15		
14:30	Tour Bus departure from Grand Hotel Hamamatsu			14:30		
				14:45		
15:00	Industrial tour at Yamaha Livingtec Corporation			15:00		
				15:15		
			15:30	<i>Break</i>	15:30	<i>Break</i>
			15:45	Oral session III "Mechanical and Thermal Properties"	15:45	Oral session VII "Perfomance"
		16:00	16:00			
		16:15	16:15			
		16:30	16:30			
17:00		16:45	16:45	16:45	16:45	
				17:00	Closing remarks	
17:30	Welcome party at "Grand Hotel Hamamatsu"					
			18:30	Banquet at "The Ocean" near Hamana Lake		
19:00						
		20:30				

Program

August 29 (Wednesday)

Oral Session I: Nano Composites 1

Chair: Prof. H.-J. Kim and Prof. A. N. Nakagaito

9:45-10:00

Fabrication and Evaluation of Lignocellulose and Nanocellulose-based Bio-composites

Hueck-Jin Kwon, Sera Jeon, Jung-Hun Lee, Ji-Won Park, Hyun-Joong Kim (Seoul National University)

10:00-10:15

Extraction of Cellulose Nanofibers from Grass by a Domestic Blender

Antonio Norio Nakagaito, Kiyoshi Nakano, Hitoshi Takagi, Jitendra Kumar Pandey (The University of Tokushima)

10:15-10:30

Effect of Crystallinity and Nanoparticles on Hydrolytic Degradation of Poly(lactic acid) Nanocomposites

MeiXian Li, SungHa Kim (Seoul National University), JoungMan Park (Gyeongsang National University), JongKyo Park (Agency for Defense Development), WooIl Lee (Seoul National University)

Oral Session II: Processing and Application

Chair: Prof. Y. Yang and Prof. H. J. Kim

10:45-11:00

A Simple Fabrication Method of Continuous Ramie Yarn/PP Prepreg

Hyun-bum Kim, Shuichiro Kimura, Koichi Goda, Junji Noda (Yamaguchi University), Kenji Aoki (Kayaku Akzo Co., Ltd.)

11:00-11:15

Development of FRTP Sheet Using Biodegradable Resin and Plain-Woven Fabric of Kenaf or Linen by Pultrusion Method

Yuma Kawazoe, Goichi Ben, Kazuhiro Sakata, Akiko Hirabayashi (Nihon University)

11:15-11:30

Development of Long Column Type Composite Mimicking Leaf Vein's Internal Structure

Isamu Riku, Shohei Fukawa, Koji Mimura (Osaka Prefecture University)

11:30-11:45

Design and Fabrication of Micro EV Made of Green Composite

Toru Amino, Goichi Ben, Kazuhiro Sakata (Nihon University)

11:45-12:00

Jute/Glass Hybrid Laminated Composites Applied for Bath Tub

Yuqiu Yang (Donghua University), Ryuiti Nishida (Kyoto Institute of Technology), Yiping Qiu (Donghua University), Xiaofeng Wu (Fudan University)

Poster session I

Chair: Prof. R. Nakamura

NOTE: 1-minute short presentation is scheduled at the beginning of poster session.

13:00-14:00

Effect of Surface Treatments on Mechanical Properties of Hemp Textile Composites

Hiroki Ishikawa, Hitoshi Takagi, Antonio Norio Nakagaito, Hiroaki Genta (The University of Tokushima), Hiroshi Saito (Kanazawa Institute of Technology)

Development of Composite Materials Containing Steam Explosion Lignin

Akihito Gotoh, Mika Kobune, Ikuko Kikuchi, Naoyuki Koyama (Hitach Chemical Co., Ltd.)

The Properties of Wood Flour – Plastic Composites (WPC) with a High Filler Content

Toshihiro Kobayashi, Singo Takada, Kanae Kajima, Masahiro Takatani (Kinki University)

Fatigue Property of Unidirectional Jute Spun Yarn Reinforced PBS Composites

Koji Iwata, Hirokazu Iguchi (Shizuoka University), Hideaki Katogi (Kanagawa University), Yoshinobu Shimamura, Keiichiro Tohgo, Tomoyuki Fujii (Shizuoka University)

Fatigue Property of Jute Monofilament

Kazunori Uematsu (Shizuoka University), Hideaki Katogi (Kanagawa University), Yoshinobu Shimamura, Keiichiro Tohgo, Tomoyuki Fujii (Shizuoka University)

Effect of Electron Beam Irradiation of Silk on the Properties of Worm Silk Fiber/Poly(lactic acid) Green Composites

Yeongmi Kim, Oh Hyeong Kwon, Donghwan Cho (Kumoh National Institute of Technology)

Flame Retardancy and Thermal and Mechanical Properties of Kenaf/Poly(Lactic acid)

Green Composites: Effect of Aluminum Trihydroxide

Yeonhae Woo, Dae Suk Bang, Donghwan Cho (Kumoh National Institute of Technology)

Compatibilization of PLA/starch Composite with Electron Beam Irradiation in the Presence of Reactive Compatibilizer

Boo Young Shin , Hyun Kug Cho, Do Hung Han (Yeungnam University)

Synthesis and DC Conductivity Mechanism for Polyaniline-Poly-3-Hydroxy Butyric Acid Composite Films

Basavaraja Chitragara, Won Jung Kim, Jin Kyoung Kim, Do Sung Huh (Inje University)

AC Electrical Conductivity for the Dispersed Composites Containing Alginate-Multiwalled Carbon Nanotubes

Basavaraja Chitragara, Dae Gun Kim, Do Sung Huh (Inje University)

Cellulose Nanowelding

Hossein Yousefi (University of Teheran), Takashi Nishino (Kobe University), Mehdi Faezipour, Ghanbar Ebrahimi (University of Teheran)

Special Session: Industrialization of green composites: The Challenges and Opportunities

Chair: Prof. K. Goda

14:00-14:20 (Keynote Lecture)

Dispelling the Myths about Natural Fibers in Natural Fiber Composites and Accelerating the Application of Natural Fiber Composites

Dilip Tambyrajah (International Natural Fiber Organization)

14:20-14:35 (Introduction of Commercial Products)

NEC Corporation

Panasonic Corporation

Yamaha Livingtech Corporation

(Alphabetical order)

14:35-15:30 (Panel Discussion)

Panelists:

Dilip Tambyrajah (International Natural Fiber Organization)

Masatoshi Izi (NEC Corporation)

Yohei Jin (Panasonic Corporation)

Hirokazu Ito (Yamaha Livingtech Corporation)

Oral Session III: Mechanical and Thermal Properties

Chair: Prof. H. Takagi and Prof. O. H. Kwon

15:45-16:00

Effect of Absorption Dose on the Mechanical and Thermal Properties of Kenaf/PLA Green Composites Directly Irradiated with Electron Beam

Donghwan Cho, Young Jae Jang (Kumoh National Institute of Technology), Jae-Hak Choi (Korea Atomic Energy Research Institute)

16:00-16:15

Role of Lumen Size on the Effective Thermal Conductivity of Green Composites

Ke Liu, Hitoshi Takagi, Antonio Norio Nakagaito (The University of Tokushima), Zhimao Yang (Xi'an Jiaotong University)

16:15-16:30

Mechanical Properties of Kenaf Fiber, Corn Husk Flour-Filled Ploy Lactic acid Hybrid Bio-Composites

Hueck-Jin Kwon (Seoul National University), Jackapon Sunthornvarabhas (National Center for Genetic Engineering and Biotechnology), Jung-Hun Lee, Sera Jeon, Ji-Won Park, Hyun-Joong Kim (Seoul National University)

16:30-16:45

Influence of Crystallinity Degree on Mechanical Property of Jute Fabric Reinforced PLA Composites

Shinichi Enoki (Nara National College of Technology), Yoko Okamoto, Hiroshi Miyabe, Kazuto Tanaka, Tsutao Katayama, Ken Kurashiki (Doshiha University)

16:45-17:00

Improvement of Mechanical Properties and Evaluation of Durability of Natural Fiber-Reinforced Furan Resin

Hiroha Tanaka, Masatoshi Kubouchi, Saiko Aoki (Tokyo Institute of Technology), Terence Tumolva (The University of Philippines, Diliman)

August 30 (Thursday)

Oral Session IV: Nano Composite 2

Chair: Prof. M. Mashkour and Prof. T. Nishino

9:30-9:45

Green Synthesis of Carbon Nanotubes-grafted Poly(2-hydroxyethyl methacrylate) Composites

Van Hoa Nguyen, Jae-Jin Shim (Yeungnam University)

9:45-10:00

From Magnetic Natural Cellulose Fibers to a Magneto-Cellulose Hybrid Nanocomposite Using Green Process

Mahdi Mashkour, Mehdi Tajvidi (University of Gorgan), Tsunehisa Kimura, Fumiko Kimura (Kyoto University)

10:00-10:15

***In situ* Biosynthesis of Bacterial Cellulose in the Presence of Nanodiamonds**

Takashi Nishino, Mari Suetsugu, Maiko Ariyoshi, Yasushi Hisaoka, Masaru Kotera (Kobe University), Kimiya Goto, Katsuhiko Hata (Bando Chemical Industries)

10:15-10:30

Preparation of Cellulose Acetate Composite Filled with Cellulose Nanofiber

Kohji Nobuta, Masaru Kotera, Takashi Nishino (Kobe University)

10:30-10:45

Development of C/C Composites with Bacterial Cellulose and Wear Properties

Yoshihito Ozawa, Lkhagvasuren Uugansuren (Fukushima University), Tokio Kikuchi (Fukushima Technology Center)

Oral Session V: Interface

Chair: Dr. M. A. Paglicawan and Prof. M. Tanaka

11:00-11:15

Effect of Plasma Polymerization treatment on Abaca Fabric Green Composites

Marissa A. Paglicawan, Blessie A. Basilia, Brigida A. Visaya (Industrial Technology Development Institute), Byung Sun Kim (Korea Institute of Materials Science,)

11:15-11:30

Effect of Plasma Treatment on Mechanical Properties of Jute Fiber/Poly (lactic acid) Biodegradable Composites

Dong Woo Lee, Hye Soo Kim (Changwon National University), Gi Beop Nam (Doshisha University), Chavidi Venkata Prasad (Changwon National University), Toru Fujii (Doshisha University), Byung Sun Kim (Korea Institute of Materials Science), Jung Il Song (Changwon National University)

11:30-11:45

Experimental Study on Effect of PVA Treatment on Flexural Strength and Flexural Modulus of Stampable Sheet Fabricated with Bamboo Fibers

Junko Koike, Kazuya Okubo, Toru Fujii (Doshiha University)

11:45-12:00

Tensile Properties of Hybrid-interface-controlled HAp/PLA

Mototsugu Tanaka, Ryohei Yasuda, Yusuke Tsuda, Isao Kimpara (Kanazawa Institute of Technology)

Poster session II

Chair: Prof. M. Ueda

NOTE: 1-minute short presentation is scheduled at the beginning of poster session.

13:00-14:00

Within-fiber Variation in Cross-section and its Effect on Mechanical Behavior of Kenaf Fibers

Yuji Nitta, Koichi Goda, Junji Noda (Yamaguchi University)

Fabrication and Mechanical Properties of Orientated Cellulose Nanofiber Nonwoven by Electrospinning Method

Toshiaki Natsuki, Keizi Suzuki, Qing-Qing Ni (Shinshu University)

Compressive Properties of Polypropylene/Degra-Novon Blends After Accelerated Weathering

Rie Natsume, Masahiro Nishida (Nagoya Institute of Technology), Norio Fukuda, Hiroaki Ito (Aichi Center for Industry and Science Technology)

Effects of Temperature on Dynamic Properties of Poly(lactic acid)/ Poly(capro-lactone) Polymer Blends

Yoshitaka Ito, Masahiro Nishida (Nagoya Institute of Technology), Tetsuo Takayama (Yamagata University), Mitsugu Todo (Kyushu University)

Tensile Properties of Bamboo Fiber at Elevated Temperatures

Akihiro Takahashi, Naoyuki Yamamoto, Toshinobu Toyohiro (Miyakonojo National College of Technology)

Aerobic Biodegradability and Durability of Natural Fiber/Poly(lactic Acid) Composites for Automotive Interior Parts

Sun Kyoung Jeoung, Pyoung-Chan Lee, Seung Eul Yoo (Korea Automotive Technology Institute), Ki Dong Lee, Su Nam Lee (NVH Korea Inc.)

Fabrication of Honeycomb-patterned Thin Film in Biodegradable Conductive Composites of Poly(ϵ -caprolactone)/Poly(3-hydroxybutyrate)/Reduced Graphene Oxide

Phung Xuan Thinh, C. Basavajara, Won Jung Kim, Do Sung Huh (Inje University)

Reinforcement Effects of Cellulose Nanofiber in Bio-based Polyurethane Biocomposite

Seong Hun Kim, Joo Hyung Lee, Sang Ho Park (Hanyang University), Kyung Wha Oh (Chung-Ang University)

Mechanical Properties of Cellulose Nanofiber Reinforced Poly Lactide Films

Seong Hun Kim, Joo Hyung Lee (Hanyang University)

Oral Session VI: Eco-friendly Materials and Technology

Chair: Prof. H. Abral and Prof. J. I. Song

14:00-14:15

Water Hyacinth Fiber-Reinforced Green Composites

Joseph Ortenero, Terence Tumolva (University of the Philippines, Diliman), Masatoshi Kubouchi (Tokyo Institute of Technology)

14:15-14:30

Effect of Alkalization on Moisture Absorption of Water Hyacinth Fibers and on Tensile Strength of Unsaturated Polyester Composites

Hairul Abral, D. Kadriadi, A. Rodianus, Perdana Mastariyanto (Andalas University), S. M. Sapuan, M. R. Ishak (Universiti Putra Malaysia)

14:30-14:45

Physical and Mechanical Properties of Injection Molded Wood Powder Thermoplastic Composites

Ying Yu (Kyoto Institute of Technology), Yuqiu Yang (Donghua University), Matsuo Murakami (Kyoto Institute of Technology), Manabu Nomura (Green Plaisir), Hiroyuki Hamada (Kyoto Institute of Technology)

14:45-15:00

100% Dry System for Complete Decomposition of Fiber Reinforced Plastics and Their Recycling Utilizing Thermal Activation of Oxide Semiconductors

Jin Mizuguchi, Hiroo Takahashi, Yuichiro Tsukada (Shinshu University)

15:00-15:15

Preparation and Characterization of the Polymer Composite Containing Surface-Modified Bottom Ash

Ha Youn Kim, Jae Won Choi (Inje University), Yong-Chan Chung (The University of Suwon), Byoung Chul Chun (Inje University)

15:15-15:30

Effect of Silica Aerogel Particle Content on the Mechanical Properties of PLA/Sisal Fiber Biodegradable Nano Composites

Chavidi Venkata Prasad, Posa Sudhakara, Dani. Jagadeesh, Dong Woo Lee (Changwon National University), Byung Sun Kim (Korea Institute of Materials Science), Jong Il Song (Changwon National University)

Oral Session VII: Performance

Chair: Prof. Y. Ozawa and Prof. Y. Shimamura

15:45-16:00

Bending and Compression Properties of Kapur (Dryobalanops Aromatic) and Kelat (Syzygium Spp.) in Orthotropic Directions

Nur Hasmiza Abdul Hamid, Mansur Ahmad, Mohd Nazip Suratman (Universiti Teknologi MARA)

16:00-16:15

Study on Compressive Strength of Semantan Bamboo (Gigantochloa Scortechinii)

Noor Zuraida Jusoh, Mansur Ahmad, Azmi Ibrahim (Universiti Teknologi MARA)

16:15-16:30

Studies on Thermal Properties of Micro-glass Balloon Reinforced Composites

Yoshihito Ozawa, Shohei Sato, Hiroya Shikama (Fukushima University), Tokio Kikuchi (Fukushima Technology Centre)

16:30-16:45

Theory for the Extension of Spun Yarn Reinforced Green Composites

Yoshinobu Shimamura (Shizuoka University), Rie Nakamura (Nihon University), Koichi Goda

(Yamaguchi University), Keiichiro Tohgo, Tomoyuki Fujii (Shizuoka University)

16:45-17:00

Effect of Biodegradable Resin on Fatigue Property of Unidirectional Jute Spun Yarn Reinforced Composite

Hideaki Katogi (Kanagawa University), Koji Iwata, Yoshinobu Shimamura, Keiichiro Tohgo, Tomoyuki Fujii (Shizuoka University), Kenichi Takemura (Kanagawa University)