

The 9th International Conference on Green Composites

November 2 - 4, 2016

**KOBE University Centennial Hall
Kobe University, Kobe, Japan**

Organized by



KOBE UNIVERSITY



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Composite Materials**

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Prof. M. Ueda, Nihon University, Japan

Conference Program

		Nov. 2	Nov. 3	Nov. 4
9	0		Registration	Session #4 Applications of Green Composites #1
	15		Session #1 Fabrication of Nanofiber	
	30			
	45			
10	0		Break	Break
	15		Session #2 Applied Characteristics of Green Composites	Session #5 Fire Retardancy of Green Composites
	30			
	45			
11	0		Lunch	Session #6 Degradable Green Composites
	15			
	30		Lunch	
	45			
12	0	Registration	Session #3 Applications of Nanofiber	Session #7 Modeling of Green Composites
	15	55 ~ : Opening remarks		
	30			
	45			
13	0	Keynote Lecture 1 Junji Sugiyama, Kyoto University "Learning from Wood Works: Remarkable Property and its Biological Significance"	Poster session	Break
	15	Keynote Lecture 2 Xiaosu YI, Beijing Engineering Laboratory "Research & Development of Green Composites in China and in Cooperation with Europe"		
	30			
	45			
14	0	Keynote Lecture 3 Hyun-Joong Kim, Seoul National University "Development of Biomass-Based High Functional Composites"	Excursion Kobe city trip 15:30 ~ 19:00	Session #8 Applications of Green Composites #2
	15			
	30			
	45			
15	0	Keynote Lecture 4 Jumpei Kawada, Toyota Central R&D Lab. "Super Impact Resistance Bioalloys for Automobiles"		Session #9 Characterization of Green Composites
	15	Keynote Lecture 5 Prof. Ton Peijs, University of London "Recent Development Self-Reinforced Polymer Composites"		
	30			
	45			
16	0	Keynote Lecture 6 Prof. Anil Netravali, Cornell University "Advanced Green Composites"		Closing remarks
	15			
	30			
	45			
	0	Photo	Banquet 19:00 ~	
	15	Welcome reception party 18:15 ~ 20:00		

The 9th International Conference on Green Composites (ICGC-9) Program

Wednesday, November 2, 2016

12:00 – 12:55 **Registration**

12:55 – 13:00 **Opening Remarks**

International Symposium on Green Composites

13:00 – 17:15

Organized by Kobe University and JSMS Committee on Composite Materials

Chairman : Hitoshi TAKAGI (Tokushima University, Japan)

13:00 – 13:45 Learning from Wood Works: Remarkable Property and its Biological Significance

Keynote 1 **Junji SUGIYAMA**

Invited Kyoto University, Japan

13:45 – 14:30 Research & Development of Green Composites in China and in Cooperation with Europe

Keynote 2 **Xiaosu YI**

Invited Beijing Engineering Laboratory, P. R. China

14:30 – 15:00 **Coffee Break**

Chairman : Yoshihito OZAWA (Fukushima University, Japan)

15:00 – 15:45 Development of Biomass-Based High Functional Composites

Keynote 3 **Hyun-Joong KIM**

Invited Seoul National University, Korea

15:45 – 16:30 Super Impact Resistance Bioalloys for Automobiles

Keynote 4 **Jumpei KAWADA**

Invited Toyota Central R&D Laboratories, Japan

Chairman : Koichi GODA (Yamaguchi University, Japan)

16:30 – 17:15 Recent Development Self-Reinforced Polymer Composites

Keynote 5 **Ton PEIJS**

Invited University of London, United Kingdom

17:15 -18:00 Advanced Green Composites

Keynote 6 **Anil Netravali**

Invited Cornell University

18:00 - **Photo**

18:15 – 20:00 **Welcome Reception - Takigawa Memorial Hall -**

Thursday, November 3, 2016

09:00 – 09:15 **Registration**

Session #1 Fabrication of Nanofiber

09:15 – 10:15

Chairman : Donghwan CHO (Kumoh National Institute of Technology, Korea)

Hirota KOGA (Osaka University, Japan)

09:15 – 09:30 Preparation of chitin nanofibers extracted from crab shell for reinforcement filler of plastics

Shinsuke IFUKU

Tottori University, Japan

09:30 – 09:45 Evaluation of Dispersion and Alignment of Carbon Nanotubes in Poly (lactic acid) Electrospun Nanofiber

Jaemin JUNG, Dasom LEE, Meixian LI, Gyu Hee LEE, Yong Chul SHIN, and Woo Il LEE

Seoul National University, Korea

09:45 – 10:00 Designing Cellulose Nanofibril/Matrix Interface Structure and Analysis Property of Polymer Nanocomposites

Hiroto SOETA, Tsuguyuki SAITO, and Akira ISOGAI

The University of Tokyo, Japan

10:00 – 10:15 Affordable extraction of cellulose nanofibers from grass straw and their application in green composites

Antonio Norio NAKAGAITO and Hitoshi TAKAGI

Tokushima University, Japan

10:15 – 10:30 **Coffee Break**

Session #2 Applied Characteristics of Green Composites

10:30 – 11:45

Chairman : Xiaosu YI (Beijing Engineering Laboratory, P. R. China)

Masahiro NISHIDA (Nagoya Institute of Technology, Japan)

10:30 – 10:45 Actuation mechanism of bioinspired hygromorph biocomposites

Antoine LE DUGOU and Mickael CASTRO

Univ-Bretagne Sud, France

10:45 – 11:00 Fabrication of High-Efficiency Electromagnetic Interference Shielding Fabrics via LbL Assembly

Ying MA, Xiangpeng LI, and Yingping QIU

Donghua University, P. R. China

- 11:00 – 11:15 Development of Production Technology of Bio-Absorption Type Anchor Based on the Biodegradable Polymer
Ji-Won PARK, Pan-Seok KIM, Jong-Ho BACK, and
 Hyun-Joong KIM
 Seoul National University, Korea
- 11:15 – 11:30 Impact damage evaluation and energy absorption mechanism of flax fiber reinforced composites
 Yan LI and Junjie ZHONG
 Tongji University, P. R. China
- 11:30 – 11:45 Development of natural materials/polymer composites and their soundproof characterization
Qing-Qing NI, Zhenzhen XU, Hong XIA, and Haruki TSUKADA
 Shinshu University, Japan

11:45 – 12:45 **Lunch**

Session #3 Applications of Nanofiber

12:45 – 13:45

Chairman : Antoine LE DUIGOU (Univ-Bretagne Sud, France)

Antonio Norio NAKAGAITO (Tokushima University, Japan)

- 12:45 – 13:00 Melt Compounding and Tensile Behavior of Hydrophobizing Agent-Treated Cellulose Nano Fiber/Polypropylene Composites
Kazuya NAGATA, Shinichi OKUDA, and Kazuaki SANADA
 Toyama Prefectural University, Japan
- 13:00 – 13:15 Thermoplastic Composites Reinforced by Cellulose Nano-fiber Induced from Shear Flow in Polymer Compounding Process
Takeshi SEMBA, Kunio TAGUMA, Masataka TAWARA,
 Satoshi NISHIOKA, Akihiro ITO, Kazuo KITAGAWA,
 Hiromasa KATAOKA, Fumiaki NAKATSUBO, and Hiroyuki YANO
 Kyoto Municipal Institute of Industrial Technology and Culture, Japan
- 13:15 – 13:30 Mechanical properties of center hole notched CFRP fabricated with modified matrix with added Cellulose Nano Fibers (CNFs)
Aya TANAKA, Kazuya OKUBO, and Toru FUJII
 Doshisha University, Japan
- 13:30 – 13:45 Wear Properties of Si-/C/C Composites with Bacterial Cellulose and Bamboo Charcoal Particles
Yoshihito OZAWA, Lkhagyasuren UUGANSUREN, and Tokio KIKUCHI
 Fukushima University, Japan

Poster Session

13:45 – 15:15

Chairman : Kazuya OKUBO (Doshisha University, Japan)

13:45 – 14:30 Obligation time for odd number

14:30 – 15:15 Obligation time for even number

Excursion - Kobe city trip -

15:30 – 19:30

Banquet - Kobe International House -

19:00 – 21:00

Friday, November 4, 2016

Session #4 Applications of Green Composites #1

09:00 – 10:15

Chairman : Yiping QIU (Donghua University, P. R. China)

Kohji SUZUKI (Chiba Institute of Technology, Japan)

09:00 – 09:15 Applications of Plant Fiber Reinforced Composites in Aircraft Interior

Yan LI

Tongji University, P. R. China

09:15 – 09:30 Effect of fiber diameter reduction of pressed stampable sheet fabricated with bamboo fibers

Kazuya OKUBO, Toru FUJII, and Yu KUWADA

Doshisha University, Japan

09:30 – 09:45 Mechanical and physical properties of rice husk particleboard

Takao OTA and Nanaka MAEDA

National Institute of Technology, Toyama College, Japan

09:45 – 10:00 Tensile Properties of Wood-plastic Composites at High Strain Rates

Masahiro NISHIDA, Shun FURUYA, Hirokazu ITO, Rie MAKISE, and

Masaki OKAMOTO

Nagoya Institute of Technology, Japan

10:00 – 10:15 Development of Carbon/Bio-Composites Technology for Electromagnetic Shielding

Jae-Ho SHIN, Ji-Won PARK, Woo-Sik NHA, and Hyun-Joong KIM

Seoul National University, Korea

10:15 – 10:30 **Coffee Break**

Session #5 Fire Retardancy of Green Composites

10:30 – 11:15

Chairman : Hyun-Joong KIM (Seoul National University, Korea)

Takao OTA (National Institute of Technology, Toyama College, Japan)

10:30 – 10:45 Mechanical and Thermal properties Improving by OXI-PAN Coated Kenaf Fiber and Fabrication of OXI-PAN Coated Kenaf/PA6

Jinsil CHEON and Donghwan CHO

Kumoh National Institute of Technology, Korea

10:45 – 11:00 Study on fire retardancy of Bioplastic / Cellulose Powder composites

Yukinori SANO, Kenta MASUYAMA, Kunihiro ARAKI, Goshi HAMABE,

Takayuki ISOBE, and Tatsuya TANAKA

Doshisha University, Japan

11:00 – 11:15 Flax fibers reinforced vinyl ester composites: mechanical and thermal properties

Atta Ur Rehman SHAH, Gibeop NAM, Byungsun KIM, and Jung-il SONG

Changwon National University, Korea

Session #6 Degradable Green Composites**11:15 – 12:00**

Chairman : Oh Hyeong KWON (Kumoh National Institute of Technology, Korea)

Junji NODA (Yamaguchi University, Japan)

11:15 – 11:30 Whole Degradable Low-Temperature Treated Cotton Reinforced PLA Composites

Xiong DENG, Zhipeng WANG, Quan ZHU, Yiping QIU, and Qiuran JIANG
Donghua University, P. R. China

11:30 – 11:45 Preparation and study on the properties of Flax fabric/Thermoplastic Cationic Starch composite

M. N. PRABHAKAR and Jung-II SONG
Changwon National University, Korea

11:45 – 12:00 Molecular Orbital Calculation on Introduction of Photodissociable Protecting Groups into PLA as Matrix of Green Composites for Hydrolysis Control

Mototsugu TANAKA, Naoki SETO, Shun-ichiro ABE, Hiroshi SAITO, and Isao KIMPARA
Kanazawa Institute of Technology, Japan12:00 – 13:00 **Lunch****Session #7 Modeling of Green Composites****13:00 – 14:00**

Chairman : Qing-Qing NI (Shinshu University, Japan)

Kenichi TAKEMURA (Kanagawa University, Japan)

13:00 – 13:15 Rupture of Jute Filament under Constant Loading

Yoshinobu SHIMAMURA, Kazunori UEMATSU, Hideaki KATOGLI,
Keiichiro TOHGO, and Tomoyuki FUJII
Shizuoka University, Japan

13:15 – 13:30 Experimental and Modeling of Water Aging on Interfacial Properties of Ramie Fiber/Polypropylene Micro-composites

Jianxia YANG, Zhuo YANG, Lan YAO, and Yiping QIU
Donghua University, P. R. China

13:30 – 13:45 A Comparison of Processing and Properties among Kenaf/PP, Glass/PP, and Carbon/PP Composites

Changhun HA, Jinsil CHEON, and Donghwan CHO
Kumoh National Institute of Technology, Korea

13:45 – 14:00 Young's Modulus Prediction of Bowing Natural Fiber Composites

Junji NODA, Kousuke TORII, and Syotaro HIRAMATSU
Yamaguchi University, Japan14:00 – 14:15 **Coffee Break**

Session #8 Applications of Green Composites #2**14:15 – 15:15**

Chairman : Yan LI (Tongji University, P. R. China)

Haruhiro INO (Kyoto Institute of Technology, Japan)

- 14:15 – 14:30 Study on Dispersibility Improvement of Jute Fiber Reinforced Thermoplastics
Kengo KURODA, Tatsuya TANAKA, and Takayasu FUJIURA
Doshisha University, Japan
- 14:30 – 14:45 Development of high mechanical strength furan matrix green composite by using hemp fabric
Jun NAKAI, Masatoshi KUBOUCHI, and Yoshihiko ARAO
Tokyo Institute of Technology, Japan
- 14:45 – 15:00 On Additive Manufacturing of Green Composites (3D Printing of Green Composites with poly(lactic acid), kenaf bast/core fibers and CNF)
Kohji SUZUKI
Chiba Institute of Technology, Japan
- 15:00 – 15:15 Highly Efficient and Recyclable Flow Reactor Based on Wood Pulp Paper Composites
Hiroataka KOGA and Masaya NOGI
Osaka University, Japan

Session #9 Characterization of Green Composites**15:15 – 16:00**

Chairman : Qiuran JIANG (Donghua University, P. R. China)

Mototsugu TANAKA (Kanazawa Institute of Technology, Japan)

- 15:15 – 15:30 Mechanical Properties and Characterization of Natural Fiber Reinforced Composites with Vinyl Ester Matrix
Jagannathan SUNDARABABU, Prabhakar SATHUJODA, and Paulius GRISKEVICIUS
Madanapalle Institute of Technology & Science, India
- 15:30 – 15:45 Molding and mechanical property of keratin composite material using ionic liquid
Keisuke KOMURO, Haruhiro INO, Teruo KIMURA, and Yoichi KODERA
Kyoto Institute of Technology, Japan
- 15:45 – 16:00 Stepwise Strain-induced Crystallization of Lignin/Natural Rubber Bio-composites
Treethip PHAKKEEREE, Preeyanuch JUNKONG, Takumi OHASHI, and Yuko IKEDA
Kyoto Institute of Technology, Japan

16:00 – 16:10 **Closing Remarks**

Poster Session

- P-01 Mechanical properties of well-aligned and well-oriented poly glycolic acid nanofibers by electrospinning
Sunglin LEE, Chizuru HONGO, and Takashi NISHINO
Kobe University, Japan
- P-02 Enhanced Mechanical Properties of Cellulose nanofiber Polyvinyl alcohol Green Composites by Heat Treatment
Noor Hisyam NOOR MOHAMED, Hitoshi TAKAGI, and Antonio Norio NAKAGAITO
Tokushima University, Japan
- P-03 Effect of multiple extensions on mechanical performance of cellulose nanofiber/polyvinyl alcohol composites
Hitoshi TAKAGI, Antonio N. NAKAGAITO, Tomoya SAKAGUCHI, Takahiro MATSUI, and Kenya NISHIMURA
Tokushima University, Japan
- P-04 Bioabsorbable Nanofibers Containing Blood Coagulation Accelerating Agents for Efficient Hemorrhage Control
Byung-Nam KIM, Suran KIM, Seo Hee HAN, and Oh Hyeong KWON
Kumoh National Institute of Technology, Korea
- P-05 Mechanical and Functional Properties of Cellulose Nanofiber Sheets Involving Silver Nanoparticles
Takuya MATSUMOTO, Hiroaki ITO, Chizuru HONGO, and Takashi NISHINO
Kobe University, Japan
- P-06 Bacterial Cellulose / Zirconium Oxide or Barium Titanate by *in-situ* Cultivation
Takuya MATSUMOTO, Risa NARAHARA, Chizuru HONGO, and Takashi NISHINO
Kobe University, Japan
- P-07 Application of Electrospun Chitosan/PLGA Bilayered Nanofiber Sheets for Anti-adhesion Agents
Suran KIM, Jae Baek LEE, Ji Young LEE, Won Il KIM, Oh Kyoung KWON, and Oh Hyeong KWON
Kumoh National Institute of Technology, Korea
- P-08 Preparation of Cellulose Diacetate/Niobate Nanosheets Bearing Covalent Bonds at the Interface and Their Mechanical Properties
Yoshiyuki SUGAHARA, Satoru SATO, Kenji SHINTANI, Naokazu IDOTA, and Takashi NISHINO
Waseda University, Japan

- P-09 Fabrication of Conjugated Polymer Nanoparticles-on-Electrospun Sheets for White Light Emitting Device
Choongho KIM, Geunseok JANG, Youngjin GWON, and Taek Seung LEE
Chungnam National University, Korea
- P-10 Stress transfer Analyses of Chemically Modified Cellulose / Montmorillonite Nanocomposite
Takuya OHASHI, Seira MORIMUNE-MORIYA, Takuya MATSUMOTO, Chizuru HONGO, and Takashi NISHINO
Kobe University, Japan
- P-11 Tensile Property of Jute/PLA Green Composite under Cyclic Temperature
Hideaki KATOGLI, Kenichi TAKEMURA, and Shunsuke KAWASAKI
Kanagawa University, Japan
- P-12 Effects of Additive Agents on Mechanical Properties of PHA/PCL Blends
Yoshiaki ITO, Masahiro NISHIDA, Hideyuki SHINZAWA, Masakazu NISHIDA, and Yoshio HAYAKAWA
Nagoya Institute of Technology, Japan
- P-13 Tensile, impact and flexural strengths of hybrid green composites reinforced by kenaf, bamboo and coir
Rosni Binti YUSOFF, Hitoshi TAKAGI, and Antonio Norio NAKAGAITO
Tokushima University, Japan
- P-14 Novel Chopped Henequen Fiber Reinforced Polyamide 6 Green Composites: Effect of Fiber Feeding Route
Jeonghoon KIM, Donghwan CHO, and Pedro J. Herrera FRANCO
Kumoh National Institute of Technology, Korea
- P-15 On Correlation between Synthesis and Mechanical Behavior of Double Network Hydrogel
Isamu RIKU, Masaaki HASHIMOTO, and Koji MIMURA
Osaka Prefecture University, Japan
- P-16 Relation between Migration Structure and Tensile Strength in a Ramie Twisted Yarn
Yuuki HIRONAKA, Eri YAMASAKI, and Koichi GODA
Yamaguchi University, Japan
- P-17 Structure and Properties of Ultradrawn Ultra High Molecular Weight Polyethylene / Nanodiamond Composites
Shota OKAMOTO, Takuya MATSUMOTO, Chizuru HONGO, and Takashi NISHINO
Kobe University, Japan

- P-18 Mechanical and thermal properties of natural fiber nonwoven reinforced polypropylene composites
Zhenzhen XU, Fangtao RUAN, and Qing-Qing NI
Anhui Polytechnic University, P. R. China
- P-19 Evaluation of mechanical properties of Silk/PBS composites
Akihiro YAMASHITA, Tatsuro KOSAKA, and Kazuhiro KUSUKAWA
Kochi University of Technology, Japan
- P-20 Compression Molding and Properties of Surface-Treated Jute or Henequen Fiber Reinforced Vinyl Ester Green Composites
Dongkyu LEE and Donghwan CHO
Kumoh National Institute of Technology, Korea
- P-21 Molding and Mechanical Property of Composite Material based on Cotton/Polyester Blend Fabric Treated by Ionic Liquid
Haruhiro INO, Tomohito ISHIBASHI, and Teruo KIMURA
Kyoto Institute of Technology, Japan
- P-22 Influence of Alkali or Silane Treatment on the Fiber Characteristics of Kenaf, Henequen, and Bamboo
Hee Sook LEE and Donghwan CHO
Kumoh National Institute of Technology, Korea
- P-23 TPI Effects on Fracture Behavior for Cross-Ply Green Composite
Koki NAKASHIMA, Kentaro KOMIYAMA, Junji NODA, and Koichi GODA
Yamaguchi University, Japan
- P-24 Fabrication of biomass-based anti-microbial carbon composite dressings for wound healing
Seo Hee HAN, Young-Gwang KO, Donghwan CHO, Won Ho PARK, and Oh Hyeong KWON
Kumoh National Institute of Technology, Korea
- P-25 Development of high fiber content jute fiber reinforced polymer composites
Shota MATSUDA and Takao OTA
National Institute of Technology, Toyama College, Japan
- P-26 Modification of Carboxymethyl Cellulose (CMC) to Fabricate Injectable Hydrogels for Preventing Undesired Tissue Adhesion
Soohyeon JEON, Won Il KIM, and Oh Hyeong KWON
Kumoh National Institute of Technology, Korea
- P-27 Selective Detection for Radioactive Cesium via Fluorescent Color Change of Conjugated Polymer
Geunseok JANG, Jongho KIM, Eunbee CHO, Yeosu YOON, and Taek Seung LEE
Chungnam National University, Korea

- P-28 Tetraphenylethylene-Based Porous Conjugated Polymer Sensor for Detection of Explosive Material
Ho NAMGUNG, Geunseok JANG, Daewon KIM, and Taek Seung LEE
Chungnam National University, Korea
- P-29 Processing and characterization of ozone treated Bamboo Fiber / Phenolic Resin Wood-polymer Composite
Marieme J. LETTE, Akito TAKASAKI, Toshihiro OKABE
Shibaura Institute of Technology, Japan
- P-30 Development of thermoset green composite made from cellulose and lignin
Kiyotaka OBUNAI, Tadao FUKUTA, and Koichi OZAKI
Okayama Prefectural University, Japan
- P-31 Effect of Biomass-Based Lignin Extracted from Black Liquor on the Curing Kinetics of Vinyl Ester Resin
Jinsil CHEON, Changhun HA, Hee Sook LEE, Oh Hyeong KWON, Won Ho PARK, and Donghwan CHO
Kumoh National Institute of Technology, Korea
- P-32 Thermal Fluidity of Bamboo Powder Decomposed by Superheated Steam Treatment
Ryoya IWATAKE, Kiyotaka OBUNAI, Tadao FUKUTA, and Koichi OZAKI
Okayama Prefectural University, Japan
- P-33 Effect of Electron Beam Irradiation on the Characteristics of Activated Carbon Prepared from Biomass-Based Lignin
Daekyun HWANG, Jeonghoon KIM, Dongkyu LEE, Won Ho PARK, Oh Hyeong KWON and Donghwan CHO
Kumoh National Institute of Technology, Korea
- P-34 Preparation and properties of cotton fabrics with hydrophobic lipophilic surfaces for waste oil collection and recycling
Chun-Hui CHEN, Xiao-hua LIU, Wei LIU, LiuWei-Guang SONG, Yi-ping QIU, and Fu-Jun XU
Donghua University, P. R. China
- P-35 Metal Surface Coating with Polyioncomplexs and Evaluation of Antifreeze Properties
Kazuki OSAKA, Akinori IMAJO, Katsuhisa HIRAI, and Kohei SHIRAISHI
Kindai University, Japan