JISTES 2008 KYOTO

SAMPE Japan 先端材料技術京都国際会議 2008

Japan International SAMPE Technical Seminar 2008 Kyoto

FINAL PROGRAM

July 15 (Tue) & 16 (Wed), 2008

DOSHISHA UNIVERSITY, Kyoto, Japan

2008 年 7 月 15 日（火），16 日（水）

同志社大学今出川キャンパス（京都）

SAMPE Japan 先端材料技術京都国際会議 2008

“Innovative Volume Manufacturing Processing Technology for Advanced Composites”

１．日時：２００８年7月１５日（火）＆１６日（木）

２．場所：同志社大学今出川キャンパス（京都市上京区烏丸今出川上ル）
寒梅館　大会議室（Ｂ１Ｆ）

３．講師および講演タイトル

日本から４名，アメリカから２名，ヨーロッパから４名の計１０名
今回も講演内容を良く理解して頂くため，サンプルや資料などのテーブルトップ展示場所を設けていますのでご覧下さい.

From Japan

・PAN Based Carbon Fiber, Current and Future

西原　正浩　氏

東レ株式会社　複合材料事業部門　ACM 技術部

・The unique properties of pitch based carbon fiber “DIALEAD®” and the applications, the present and the future

葭谷　明彦　氏

三菱樹脂株式会社　産業資材事業本部　炭素繊維事業部

The demand for Pitch based carbon fiber is growing as well as that of PAN based CF. DIALEAD® is the trademark of a coal tar pitch based carbon fibers produced by Mitsubishi Plastics Inc which is a core business company of Mitsubishi Chemical Holdings Group. These days, machine industry has become a major market for DIALEAD®. The unique properties of DIALEAD® such as high modulus, high thermal conductivity, and extremely low thermal expansion are very effective to improve the performance of industrial machines. The behavior of DIALEAD® unique properties, the actual applications of DIALEAD® composites, and the future prospects will be presented.

・Application of Tensioned CFRP Strip Method to an Existing Bridge

立石　晶洋　氏，斉藤　誠　氏

日鉄コンポジット株式会社　技術部

Tensioned carbon fiber reinforced polymer (CFRP) strip method or Outplate-method® was applied to the 28 years old reinforced concrete (RC) box girder bridge in order to

rehabilitate and increase the load capacity of the bridge. The Chofu Bridge had been deteriorated by 28 years of heavy traffic and had many cracks on the underside of the main girders. Before and after the CFRP application, on-site load tests of the bridge were conducted using a 45ton-weight vehicle. Results of the tensioned CFRP strip application to the bridge girders proved effective to reduce the stress in the reinforcing bars and to reduce crack widths.

- **Development of the Chain-curing RTM Process**
  - extremely high productive composite manufacturing technology

水野　宏　氏
三菱重工業株式会社　名古屋航空宇宙システム製作所　材料研究部
榎本　潔　氏
財団法人　次世代金属・複合材料研究開発協会

Replacement of metals by composites in commercial aircraft prime structures is rapidly increasing to achieve further structural weight saving and reduce fuel consumption with a background of globally soaring oil prices. However, the mainstream of composites manufacturing technologies is still using autoclaves for curing and their production costs are higher relative to metal components manufacturing. Therefore, the reduction of the production costs in composites manufacturing are strongly needed as well as reliability and stability in their quality. We studied liquid composites molding method by the chain-curing technique as a new mean. The chain-curing technique is our original technology and has unique points such as rapid curability, shadow region curing capability, and almost no energy consumption for cure. In this paper, we focus on the innovative RTM technology utilizing the chain-curing system1) called "the chain-curing RTM". The chain-curing RTM is extremely high productive composite manufacturing technology, which clearly shows the great potential of application to aerospace structures.

From U. S. A.

- **Practical Examples of Design for High Volume Manufacturing of Composite Materials**

Dr. Clement Hiel
Composite Support & Solutions Inc.

The presenter will discuss relevant manufacturing experience developed on an 85 foot tall electrical transmission tower, and a tubular and tapered powerpole. A common denominator in these applications is the implementation of innovative fabric-folding technology which creates structural joint members with high shear strength. They are

ideally suited for snap-joint assembly, which has yielded the latest application breakthroughs in aerospace and energy infrastructure projects.

Time tested integrated design and analysis approaches will be highlighted. These have the advantage that they allow the user to seamlessly move from the development to the prototype and into the production stage.

Ongoing experience with all composite open-top trailers will be discussed as well as a mass-produced composite part which recently received the “world innovation award.”

- **Dynamic Solutions to problematic vacuum bagging challenges**

Mr. Craig Barker, CEO, and Mr. Michael D. Kipp, Chairman

ACTR (American Consulting Technology and Research)

Explore the problems associated with the vacuum bagging of highly contoured carbon fiber parts. We will provide solutions for vacuum bagging and consolidation of parts formerly considered to be impossible.

A demonstration of the vacuum bagging of Isotruss components will be provided as well as the introduction of new products for the sealing and protection of carbon fiber tooling. We will also introduce Isotruss structural technology to the aerospace industry.

From Europe

- **A two minutes Production of tube molding with tool surface heating by induction**

Mr. Alex Guichard

CEO, RocTool, France

- **Composites Implementation Challenges**

Prof. Jan Anders Månson

EPFL, Switzerland

- **Mass production of thermoplastics with continuous fibers**

Dr. Matthias Gäumann

ELCEE, Switzerland

Polymer composites are popular in sports and aircrafts, thanks to their superior performance to weight ratio with respect to many other materials. However, they are traditionally less cost competitive at the high volumes associated with commodity applications.

Integrated Processing of Polymer Composites (IPPC) is a technology that has been developed at the Swiss Federal Institute of Technology, in Lausanne, and has recently

been transferred to a start-up, EELCEE SA. This technology enables high series production of molded plastic components with integrated continuous fiber reinforcements.

The presentation highlights fields and applications of IPPC, by covering technical and economic aspects. A special emphasis is given to the automotive industry, given the particularly high demand for light and affordable car components, along with more integration of functions. The presentation will also highlight some challenges related to the implementation of novel technologies in established industries.

・ **Mass Production of Thermoformed CFRP Parts with Highly-Automated Manufacturing Unit**

Prof. Christian Peters

Faseristitut Bremen, Germany

４．スケジュール

7/15（火）		7/16（水）	
10:00 – 10:20	開会の辞	9:30 – 10:30	Mr. Alex Guichard France
10:20 – 11:20	西原　正浩氏 Japan	10:30 – 11:30	立石　晶洋　氏 斉藤　誠　氏 Japan
11:20 – 13:00	Lunch	11:30 – 13:00	Lunch
13:00 – 14:00	Dr. Clement Hiel U. S. A.	13:00 – 14:00	Prof. Christian Peters Germany
14:00 – 15:00	葭谷　明彦　氏 Japan	14:00 – 15:00	Prof. Jan Anders Månson Switzerland
15:00 – 15:20	Coffee Break	15:00 – 15:20	Coffee Break
15:20 – 16:20	Mr. Craig Barker and Mr. Michael D. Kipp U. S. A.	15:20 – 16:20	Dr. Matthias Gäumann Switzerland
16:20 – 17:20	水野　宏　氏 Japan	16:20 – 16:30	閉会の辞
17:30 – 19:30	Banquet at 寒梅館		

7 月 15 日（火）は京都の祇園祭の宵々山の夕べです.
7 月 16 日（水）は京都の祇園祭の宵山の夕べです.
7 月 17 日（木）は祇園祭の山鉾巡行です.（９時～１３時）

祇園祭（宵山）

祇園祭（山鉾巡行）

５．参加費

SAMPE　会員	¥30,000
非会員	¥40,000

主催

先端材料技術協会（SAMPE Japan）
会　長　岩井　作弥　　東京テクノロジー

JISTES 2008 KYOTO 実行委員会

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会場アクセス

京都市営地下鉄烏丸線「今出川」駅 2 番出口から北へ徒歩 1 分

申込み方法：

下記申込用紙に必要事項を記載の上，JISTES 2008 KYOTO 実行委員会事務局まで FAX（FAX : 0773-62-8939）または e-mail（宛先：sinohara@maizuru-ct.ac.jp）にてお申し込み下さい．（できるだけ７月８日までにお申し込み下さい）

参加費は『三菱東京 UFJ 銀行　大塚支店　（普）No.0000304　先端材料技術協会』宛に，お振り込みください．振り込み手数料は振り込み者負担となっておりますのでよろしくお願いいたします．なお，振り込みの際に所属機関名で振り込みをされる場合は，できるだけ個人名がわかるようにして振り込んでください．

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JISTES 2008 KYOTO **実行委員会事務局行**

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SAMPE Japan **先端材料技術京都国際会議 2008（**JISTES 2008 Kyoto**）に参加します**

会社名：	**所　属：**
郵便番号：	**TEL：**
住　所：	**FAX：**
氏　名：	**e-mail：**

参加費を振り込んだ日，あるいは振り込む予定の日

月　　日

参加費を振り込んだ名義，あるいは振り込む予定の名義