This symposium will be the sixth in a series the first of which was held in Newark, NJ in 1999. In a relatively small but significant departure from the previous symposia, this symposium will be concerned not only with the well established polyimides but also the entire range of high temperature/high performance polymers. As a loose definition this would include all polymeric materials which exhibit thermal stability above 200 °C and in addition have outstanding thermal, mechanical, electrical, optical, surface and rheological properties. An example would be the Poly(p-phenylene benzobisoxazole) materials and Carbon Nanotube composites. These materials exhibit exceptional thermal, mechanical and electrical properties. Other examples would include the entire range of rigid rod polymers as well as fluorinated hydrocarbon chains that can exhibit extraordinary surface properties.

Of all these materials the polyimides have found the widest range of application in such diverse areas as the aerospace industry and microelectronic components. The unique combination of physical and chemical properties makes these materials highly attractive for demanding applications where chemical inertness, high temperature stability, low dielectric constant, mechanical toughness and processability are primary concerns. In addition, their ability to adhere to a range of inorganic materials including metals, ceramics, glasses and semiconductors have made these materials predominant in coating and composite applications. In this regard the issue of adhesion and interaction with other materials will be one of the major focal points of this symposium.

It is also our pleasure to announce that this symposium will be held in collaboration with Prof. Gordon Nelson of the Florida Institute of Technology and Dr. Martha Williams and Trent Smith of the NASA Kennedy Space Center. These individuals have been active in the area of high temperature polymers especially in regard to aerospace applications.

The invited speakers have been selected so as to represent widely differing disciplines and interests, and they hail from academic, governmental and industrial research laboratories. This meeting is planned to be a truly international event both in geographic coverage as well as in spirit. Below is a PARTIAL listing of papers to be presented at this symposium.

**SYNTHESIS**

**Wai Kin Chan;** Department of Chemistry, The University of Hong Kong, Pokfulam Road, Hong Kong, CHINA; **Synthesis of Metal Containing Aromatic Polyamides and Polymesters and Their Properties**

**Myeon-Cheon Choi,** Junji Wakita, Sinji Ando, and Chang-Sik Ha; Department of Polymer Science and Engineering, Pusan National University, Busan 609-735, KOREA; **Highly Transparent and Refractive Polyimides with Controlled Molecular Structure by Chlorine Side Groups**

**Thuy D. Dang,** Zongwu Bai, Narayanvan Venkat, Alexander B. Morgan, Joseph A. Shumaker and Marlene D. Houtz; AFRL/RXBN, 2941 Hobson Way, Wright-Patterson Air Force Base, Dayton, OH 45433, USA; **Novel Rigid-rod Random Copolymers with Flexibilizing Structural Units for Enhanced Flame Resistance and Blast Protection**

**Roy Odle;** SABIC Innovative Plastics, 1 Lexan Lane, Mt. Vernon, IN 47620; **Synthesis and Structure-Property Relationships of Polyetherimide-Sulfones**

**A. L. Rusanov,** L. G. Komarova, E. G. Bulycheva and M. G. Bugaenko; A. N. Nesmeyanov; Russian Academy of Sciences, 28 Vavilov Str., Moscow, 119991, RUSSIA; **New Sulphonated Polymers and Polynaphthylimides**

**Jason K. Ward,** Mita Das and William J. Koros; School of Chemical & Biomolecular Engineering, Georgia Institute of Technology, Atlanta, GA-30332, USA; **Synthesis of 6FDA based Membranes for Olefin Paraffin Separations**

**AEROSPACE APPLICATIONS**

**M. Akram,** S. Bhowmik, R. Benedictus and J. A. Poulis; Aerospace Materials and Structures, Faculty of Aerospace Engineering, Delft University of Technology, Kluyverweg 1, 2629 HS Delft, THE NETHERLANDS; **Surface Modification of Polymide by Atmospheric Pressure Plasma for Adhesive Bonding with Titanium and its Application to Aviation and Space**
Camille A. Thorpe, Feng Yang and **Gordon Nelson**; College of Science, Florida Institute of Technology, Melbourne, FL 32901, USA; **Design, Synthesis and Characterization of Novel Ferrocene-Containing Polyimide Copolymers**

**Rohitkumar H. Vora**; Advanced Polymers Research & Technologies, 8080 Heritage Drive, Alburdis, PA 18011 USA; **Designing of Next Generation of High Performance Ceramic® Type Nanocomposite Materials for Aerospace and Defense Applications**

**SPECIAL APPLICATIONS**

**Anne Jonquieres**; Laboratoire de Chimie Physique Macromoleculaire, ENSIC, B.P. 20451, F-54001 Nancy, FRANCE; **New Polyurethaneimides Containing Lewis Bases for Gas Microsensor Applications**

**Brigitte Mutel**, Philippe Supiot, Adil Essakh, Axel Löfberg, Sébastien Paul, Véronique Le Courtois and Elisabeth Bordes-Richard; (GéPIFRéM), EA 3571, USTL, Villeneuve d’Ascq, FRANCE; **Coating of Structured Reactors by Plasma Assisted Polymerization of TMDSO**

Javier Parrondo and **B. Rambabu**; Solid State Ionics and Surface Science Laboratory, Department of Physics, Southern University and A&M College, Baton Rouge, Louisiana 70813, USA; **Polybenzimidazole Membranes (PBI) for HT-PEMFCs: Synthesis, Fuel Cell Performance and Substantiate with That of Commercial High Temperature PEMS**

**W. M. Shan Wickramanayake**, R.P. Lively, R. R. Chance, W. J. Koros, D.G. Peiffer, B. Carstensen and R. S. Polizzotti; Georgia Institute of Technology, 311 Ferst Drive, Atlanta, GA 30332; **Polybenzimidazole Spheres: Fabrication and Industrial Applications**

**Yasuharu Yamada** and Tomoyuki Suzuki; Kyoto Institute of Technology, KIT Liaison Center, Department of Biomolecular Engineering, Matsugasaki, Sakyo-ku, Kyoto 606-8585, JAPAN; **Hyperbranched Polyimide-silica Hybrids for Gas Separation Membranes**

**ELECTRONIC APPLICATIONS**

**E. T. Kang**, C. X. Zhu and K. G. Neoh; Dept. of Chemical & Biomolecular Engineering, National University of Singapore, Kent Ridge, Singapore 119260; **Electrical Bistability and Random Access Memory Effects in Functionalized Polyimides**

Rakesh Kumar; Specialty Coating Systems, 7645 Woodland Drive, Indianapolis, IN 46278; Parylene HT: a High Temperature Vapor Phase Polymer for Electronics Applications

Masataka Murahara; Tokyo Institute of Technology, Innovation Propellant Department, Tokyo, JAPAN; Polymer Coating Surface Change into Ceramic Layer <Photo-oxidized Silicone Oil Layer for High Temperature and High Electric Insulation Resistance

Joung-Man Park, Zuo-Jia wang, Joel GnidaKouong, Ga-Young Gu, Woo-II Lee, Jong-Kyoo Park and K. Lawrence DeVries; Gyeongsang National University, Jinju 660-701, KOREA; Interfacial Aspects and Self-Sensing of Carbon Fiber/CNT-Phenol Nanocomposites using Electro-Micromechanical Techniques and Wettability

Luke Roberson, Chris Immer, Shanju Zhang, and Satish Kumar; NASA, Applied Technology, Kennedy Space Center, Florida; Carbon nanotube fiber filaments for lighting applications”

STRUCUTURE PROPERTY STUDIES

Jude, O. Iroh, Jandro Abot, Harikrishna Boddu, Huabin Wang, Marlene Hourz, Loon-Seng Tan and Gary Price; Department of Chemical and Materials Engineering, Department of Aerospace Engineering, University of Cincinnati, Cincinnati, Ohio 45221-0012; Damping Behavior of Carbon Nanofiber/polyimide Nanocomposites

Gennady Mikhailov; 13/1-161, Olga Forsh Street, 195269, St. Petersburg, RUSSIA; Interrelation Between Chemical Structure, Super-molecule Organization and Properties of the Polyarimide Fibers

Musto Pellegrino, Mariangela Leo, Giuseppe Mensitieri and Marino Lavorgna; Institute of Chemistry and Technology of Polymers (ICTP), National Research Council of Italy, via Campi Flegrei, 34, Pozzuoli (Na), ITALY; Molecular Mechanism of Diffusion of H₂O and Methanol in PMDA-ODA Polyimide: a Time-resolved FTIR Study

Francette Thominette; LIM ENSAM, 151 Bd de l’Hôpital, 75013 Paris, FRANCE; Hygrothermal Aging of Nafion®
TOPOICS OF INTEREST INCLUDE:

1. Chemistry, synthesis and characterization
2. Surface chemistry and surface modification

OTHER HIGH TEMP./HIGH PERFORMANCE MATERIALS

3. Examples include
   a. Aramids
   b. Carbon nanotubes
   c. Poly phenylenes
   d. High. temp. epoxies
   e. Fluorinated materials
   f. etc.

PHYSICO-CHEMICAL PROPERTIES

4. Thermal-mechanical properties
5. Electrical properties
6. Adhesion properties and adhesion improvement
   a. Surface treatment
   b. Use of coupling agents
   c. Controlling stress level
7. Encapsulation and barrier properties
8. Effects of aging and environment on long term stability, reliability and durability

APPLICATIONS

9. Polymides as adhesives and insulators.
10. Polymides as dielectrics, photoresists and encapsulants in microelectronic and biomedical structures
11. Metallization of polyimide and investigation of interfaces.
12. Composite applications

CHARACTERIZATION

13. Chain architecture
14. Bulk morphology
15. Surface morphology
16. Surface chemistry

NOVEL AND ADVANCED FORMULATIONS

17. Ultralow dielectric materials, low thermal expansion liquid crystals, polyimide blends, nanocomposites, copolymers, foams, etc.

This symposium is being organized by MST Conferences, LLC under the direction of Dr. K. L. Mittal, Editor-in-Chief, Journal of Adhesion Science and Technology. All authors are invited to submit their manuscript for publication in the journal Polymer Engineering and Science edited by Prof. Robert Weiss of the University of Akron. Please indicate whether you plan to publish in the Journal and will have your manuscript ready at the time of the symposium. Those interested in publishing will be contacted by Prof. Weiss directly. Please notify the conference chairman of your intentions to present a paper as early as possible. An abstract of about 200 words should be sent by October 15, 2009 to the conference chairman by any of the following methods:

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