

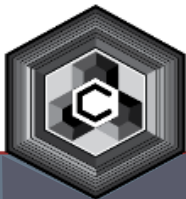
CARBON FIBERS AND THEIR COMPOSITES

An American Carbon Society Workshop

WORKSHOP SCHEDULE

April 16-17, 2015

Double Tree Hotel, Oak Ridge, TN



The American Carbon Society

GRAFTech
International

Redefining limits

Day 1 – Thursday April 16, 2015

7:30 AM	8:30 AM	Registration / Breakfast
8:30 AM	8:45 AM	Welcome / announcements
8:45 AM	9:30 AM	Invited Lecture -1: Matthew Weisenberger , Associate Director, University of Kentucky CAER, Lexington, KY - "Carbon Fiber Overview with an Emphasis on Spinning PAN Precursor (White Fiber)"
9:30 AM	10:15 AM	Invited Lecture -2: Amit Naskar , Group Leader, Carbon and Composites Group, ORNL, Oak Ridge, TN - "Alternative Precursor Chemistries and Conversion Technologies for Carbon Fiber Manufacturing"
10:15 AM	10:35 AM	Break
10:35 AM	11:05 AM	Keynote Lecture 1: Lawrence Drzal , (Michigan State University) "Surface Treatment of Carbon Fibers by the UVO Process: Effect of Fiber Surface Properties, Interfacial Adhesion, and Composite Mechanical Properties"
11:05 AM	11:25 AM	Oral - 1: Soydan Ozcan (Oak Ridge National Laboratory): "The Role of Microstructure and Voids in Carbon Fiber Mechanical Properties"
11:25 AM	11:50 AM	Oral - 2: Ron Ott (Oak Ridge National Laboratory): Overview of Carbon Fiber Technology Facility (CFTF) and Manufacturing Demonstration Facility (MDF)
11:50 AM	12:00 AM	Instructions for CFTF and MDF tours
12:00 AM	1:00 PM	Lunch (Double Tree Hotel, Oak Ridge)
1:00 PM	3:00 PM	CFTF Tour (Palladium Way, Oak Ridge, TN 37830)
3:00 PM	5:00 PM	MDF Tour (2360 Cherahala Blvd, Knoxville, TN 37932)
5:30 PM	6:30 PM	Poster Session – 1: FIBERS AND PRECURSORS (Posters 1 – 11)
6:30 PM	8:00PM	Reception/Dinner (Double Tree Hotel, Oak Ridge) Keynote Lecture 2: Cliff Eberle (Oak Ridge National Laboratory) : Overview of Institute for Advanced Composites Manufacturing Innovation

Day 2 – Friday April 17, 2015		
7:30 AM	8:30 AM	Registration / Breakfast
8:30 AM	9:15 AM	Invited Lecture -3: Renee Bagwell , Sr. Process Technology Engineer, Harper International, Buffalo, NY - "Designing Research Systems for Scale Up"
9:15 AM	9:35 AM	Oral - 3: Ryan Paul (GrafTech International): "Treatment of Lignin Precursors to Improve their Suitability for Carbon Fibers: A Literature Review"
9:35 AM	9:55 AM	Oral - 4: Gajanan Bhat (The University of Tennessee, Knoxville): "Effect of Processing Conditions on the Structure and Properties of Cellulosic Precursor-Based Carbon Fibers"
9:55 AM	10:55 AM	Break / Poster Session – 2: COMPOSITES (Posters 12 – 21)
10:55 AM	11:40 AM	Invited Lecture - 4: Jeffery W. Baur , Research Leader, Organic Matrix Composite M&P, WPAFB, OH - "Advanced and Multifunctional Composite Structures: Challenges and Opportunities"
11:40 AM	12:00 AM	Oral - 5: Gary D. Seidel (Virginia Polytechnic Institute and State University) "Computational Modeling and Experimental Characterization of Macroscale Piezoresistivity in Aligned Carbon Nanotube and Fuzzy Fiber Nanocomposites"
12:00 PM	1:00 AM	Lunch
1:00 PM	1:45 PM	Invited Lecture - 5: Dr. Wesley Hoffman , Principal Scientist, Air Force Research Laboratory, Edwards, CA - "Carbon Fiber Composites in Aeronautic and Astronautic Applications"
1:45 PM	2:05 PM	Oral – 6: Carlos Leon y Leon (Quantachrome Instruments): "An Overview of Modern Carbon Fiber Characterization Techniques"
2:05 PM	2:25 PM	Oral - 7: Toshikazu Miyoshi (University of Akron): "Elucidation of Stabilization Pathways of Polyacrylonitrile by ¹³ C- ¹³ C and ¹ H- ¹³ C Two Dimensional Solid-State NMR Spectroscopy"
2:25 PM	2:45 PM	Oral - 8: Cheryl Xu (Florida State University): "Three-Dimensional Multi-Reinforced Ceramic Composites with Enhanced Mechanical/Thermal/Electrical Property"
2:45 PM	3:05 PM	Oral - 9: Li Cao (University of Dayton): "Fluorescent Carbon Dots and Nanodiamonds as Optical Additives in Polymeric Fibers for Biological Imaging Applications"
3:05 PM	3:25 PM	Closing Remarks / Adjourn

POSTER SESSION 1 - Fibers and Precursors

April 16, 5:30-6:30 PM

1	The Effects of Coagulation Bath Concentration on PAN Precursor Fiber Morphology	Wilson Rice , E. Ashley Morris, Matthew Weisenberger	University of Kentucky
2	The Effects of Lignin Addition on the Properties of PAN Based Carbon Fiber	E. Ashley Morris, Matthew Weisenberger, Sarah E. Edrington	University of Kentucky
3	Development of Carbon Materials from Low Grade Petroleum Resources	Chui Wee Lee, Ji Sun Im, Young-Pyo Jeon	University of Science and Technology (Korea)
4	Nanofiber-by-Gas Jet Carbon Nanofiber Derivation Method and Numerical Simulation	Darrell H Reneker, Maxim Mikhaylenko , Alex Povitsky	University of Akron
5	Tensile Properties and Supranano Structure of Carbon Nanotube Yarns	Nitilaksha Hiremath , Gajanan Bhat, Amit Naskar, Jimmy Mays	University of Tennessee
6	Tensile and Interfacial Characterization of Lignin Carbon Fibers	Nathan Meek , Dayakr Penumadu, Omid Hosseinaei, David Harper	University of Tennessee
7	Melt Spun and Electrospun Carbon Fibers from Different Lignin Precursors	Omid Hosseinaei , David Harper, Joseph Bozell, Timothy Rials	University of Tennessee
8	Influences of Organosolv Fractionation Time on Thermal and Chemical Properties of Lignins	Jingming Tao , Omid Hosseinaei, Pyoungchung Kim, David Harper, Joseph Bozell, Timothy Rials, Nicole Labbé	University of Tennessee
9	Understanding of Stabilization Polyacrylonitrile by Solid-State NMR	Xiaoran Liu , Toshikazy Miyoshi	University of Akron
10	High Yield Process for Lignin-based Activated Carbon Fibers	Nidia C Gallego, Yanfeng Yue , Cristian I Contescu	Oak Ridge National Laboratory
11	Effect of CNT Additives on Electrospun Fibers Properties	Chang Liu , Jean-Baptiste Dumuids, Nuha Al-Habis, Yuhan Liao, Li Cao, Khalid Lafdi	University of Dayton

POSTER SESSION 2 - Composites

April 17, 10:00 - 11:00 AM

12	3D-Printed Carbon Fiber Reinforced Polymer Composites	Halil L. Tekinalp , Vlastimil Kunc, Gregorio M Velez-Garcia, Chad E Duty, Lonnie J Love, Amit K Naskar, Craig A Blue, Soydan Ozcan	Oak Ridge National Laboratory
13	Negative Permittivity Discovered in Continuous Carbon Fiber Epoxy-Matrix Structural Composites	Yoshihiro Takizawa , D D L Chung	SUNY Buffalo
14	Lignin Based Novel Carbon Foams	Rohit Uppal , David Harper	University of Tennessee
15	Thermal Management in Carbon Fiber Composites	Jordan Burgess , John Craddock, Matthew C Weisenberger, A. T. Owens, J Keith Roberts, Carissa Russell, Rich Foedinger, Simon Chung	University of Kentucky
16	Carbonization of Microfibril Cellulose Aerogel: Surface, Structural and Oil Absorption Properties	Yujie Meng , Timothy M Young, Peizhi Liu, Cristian I Contescu, Biao Huang, Siqun Wang	The University of Tennessee
17	Carbon Fiber Composites with Lignin-Extended Thermoplastics	Kokouvi (Sam) Akato , Don L Erdman III, Amit K Naskar	Oak Ridge National Laboratory
18	In-situ Raman and Piezoresistive Characterization of Aligned Carbon Nanotube-Polymer Nanocomposites	Engin Cem Sengezer , Gary D Seidel	Virginia Polytechnic Institute and State University
19	Progress on the Development of Low Cost Environmental Barrier Coatings	Kirk A Rogers , Jon R Leist	Carlisle Brake & Friction
20	Engineered Carbon-based Materials for Hard and Soft Tissue Repair and Reconstruction	J. Czarnecki, K. Lafdi , P. Tsonis	University of Dayton
21	Structural Characterization of Lignin-based Composite Anodes for Lithium-ion Batteries	Nicholas McNutt , Marshall McDonnell, Orlando Rios, Mikhail Feygenson, David Keffer	University of Tennessee