

PIRE



SYNTHESIS · NANOSTRUCTURE · PROPERTIES
POLYMER-DERIVED CERAMIC FIBERS

KANSAS STATE
UNIVERSITY

UC DAVIS
UNIVERSITY OF CALIFORNIA



University of Colorado
Boulder

A UNIVERSITY OF
TEXAS
ARLINGTON

MIT
Massachusetts
Institute of
Technology

LEHIGH
UNIVERSITY



— FIRST ANNUAL —
PIRE WORKSHOP
July 16–18, 2018
MANHATTAN, KANSAS

Welcome to the first annual
PIRE Workshop and Retreat. Kansas State University
is honored to host this exciting event.

PIRE WORKSHOP

SCHEDULE OF EVENTS

Session 1 8:30 – 11:15 a.m.	Monday 7-16-18	Moderator: Singh
	Speaker	Topic
8:25 – 8:30 a.m.	Gurpreet Singh	Opening remarks
8:30 – 9 a.m.	Peter Kroll	Modeling amorphous polymer-derived ceramics
9 – 9:30 a.m.	Michael Cinibulk	Structural ceramics research at AFRL
9:30 – 10 a.m.	Samuel Bernard	Polymer-derived Si-E-C-N (E = B, Al, Ti) fibers: from polymer synthesis to the design of ceramic fibers
10 – 10:15 a.m.		Refreshment break
10:15 – 10:45 a.m.	Rishi Raj	Nanolayer-by-nanolayer fabrication of defect-free dense matrices for CMCs
10:45 – 11:15 a.m.	Randall Hay	SiC fiber microstructure, strength and oxidation
11:15 a.m. – 1 p.m.		Lunch break

Session 2 1 – 3:45 p.m.	Monday 7-16-18	Moderators: Kroll and Raj
	Speaker	Topic
1 – 1:30 p.m.	Martin Friess	Development of SiBCN fibre composites in Germany
1:30 – 2 p.m.	Zlatomir Apostolov	Low-temperature treatment of commercial pre-ceramic polymers and its effects on their processing properties
2 – 2:30 p.m.	David Lipke (non-PIRE Invited talk)	An overview of ultra-high-temperature testing capabilities at Missouri S&T
2:30 – 2:45 p.m.		Refreshment break
2:45 – 3:15 p.m.	Pietro Galizia	Layer-by-layer flash pyrolysis of polysilazane-based polymers into a green UHTCMC and ablation resistance of the final dense composites
3:15 – 3:45 p.m.	Himanshu Jain	Characterization of chemistry of surfaces of solids, especially glasses
4 – 5 p.m.		Poster session one and happy hour

Tuesday, 7-17-18 • Hike the Konza Prairie – attendees to be picked up by 15-seat vehicle outside of Marlatt Hall at 7:30 a.m. (eat breakfast before pick up) or enjoy a free morning. 11:30 a.m. – 1 p.m. • Return to Alumni Center for lunch.

Session 3 1 – 3:45 p.m.	Tuesday 7-17-18	Moderator: Raj and Zhao
	Speaker	Topic
1 – 1:30 p.m.	Masaki Narisawa	Synthesis of carborane network structure by condensation reaction of polysilanes in controlled atmospheres
1:30 – 2 p.m.	Brett Compton (non-PIRE Invited talk)	Additive manufacturing of thermoset-based composites
2 – 2:30 p.m.	Phuong Bui (non-PIRE Invited talk)	Ceramic and ceramic composites via stereolithography
2:30 – 2:45 p.m.		Refreshment break
2:45 – 3:15 p.m.	Dong Lin (non-PIRE Invited talk)	3D printing of ultra-high-strength continuous carbon fiber composites
3:15 – 3:45 p.m.	Gurpreet Singh	PDC fibers and composites for energy storage
3:45 – 4 p.m.	Sandeep Shah (non-PIRE Invited talk)	On separating the contribution of corrosion and fatigue in mixed-mode, sub-critical crack growth in AA7079-T6 alloy
4 – 5 p.m.		Poster session two and happy hour

Session 4 8:30 – 11:15 a.m.	Wednesday 7-18-18	Moderator: Jain
	Speaker	Topic
8:30 – 9 a.m.	Alexandra Navrotsky	Carbon, calorimetry and cataclysms: SiOC in planetary settings
9 – 9:30 a.m.	Thomas Key	Process modeling of polycarbosilane
9:30 – 10 a.m.	Elsa Olivetti	Resource-effective materials development
10 – 10:15 a.m.		Refreshment break
10:15 – 10:45 a.m.	Kejie Zhao (non-PIRE Invited talk)	First-principles modeling on lithiation of SiOC anode materials
10:45 – 11:15 a.m.	Gian Soraru	Polymer-derived SiOC as an anode for Li-ion batteries
11:15 a.m. – 1 p.m.		Lunch break

Breakfast	7 – 8:30 a.m.	Kramer Dining Center
Lunch	11:15 a.m. – 1 p.m.	Conference location
Dinner	5 – 6:30 p.m.	Kramer Dining Center

Schedule continued on back →

Session 5 1 – 3:45 p.m.	Wednesday 7-18-18	Moderator: Menon
	Speaker	Topic
1 – 1:30 p.m.	Ben Claar/ Ryan Woodburn (PIRE mandatory talk)	PIESTAR: Making data collection and reporting as easy as pie.
1:30 – 2 p.m.	Kim Nicholson (PIRE mandatory talk)	OEIE talk
2 – 2:30 p.m.		Qualtrics survey responses
2:30 – 3:30 p.m.		Photo shoot, optional video interviews and refreshment break
3:30 – 4 p.m.	David Marshall	PIRE informal discussions/closing remarks
4 – 5 p.m.		Poster session three and happy hour

Please be sure to fill out your surveys so we can improve the level of success of the workshop and retreat.

Thursday
7-19-18 • End of workshop. Checkout by 3 p.m.
Thank you for attending.

Industry participants

Name	Company	Email
Jared Weaver	GE	weaver@ge.com
Roger Smith	Sierra Turbines	roger@sierraturbines.com
Sandeep Shah	Boeing	sandeep.r.shah@boeing.com
Doug Hardy	Starfire Systems	Hardyd@starfiresystems.com

Recommended dining in Manhattan

Restaurant	Address / Phone
Tallgrass Tap House	320 Poyntz Ave, (785) 320-2933
Little Apple Brewing Co.	1110 Westloop PL (785) 539-5500
Houllhan's	1641 Anderson Ave. (785) 776-5909
Bourbon & Baker	312 Poyntz Ave. (785) 320-4959
Bluestem Bistro	1219 Moro St. (785) 587-8888
Harry's Restaurant	418 Poyntz Ave. (785) 537-1300

Contact information – call or text

Conference questions: (785) 395-3710
 Marlatt Hall: (785) 395-3411
 Gurpreet Singh: (720) 891-9385
 Salfesh Menon: (785) 477-0605
 Zhongkan Ren: (541) 602-4599

For more information on Aggieville —
www.aggieville.org

