



# INDUSTRY MEMBER MEETING

10-11 MAY 2004

## Target Markets



Are you  
hitting  
your  
mark ?

The  
Penn Stater  
Conference Center  
Hotel  
State College, PA

- Research Updates
- Member Capabilities
- Industry Discussion Panel
- NSF Funding Opportunities

PENNSTATE



Center for Innovative  
Sintered Products

# Special Guest Speakers



## Dr. Kesh Narayanan

Dr. Narayanan received his PhD in Materials Science and Engineering from Carnegie Mellon University. He is the Director of Industrial Innovation Group within the Division of Design, Manufacture and Industrial Innovation (DMII) at National Science Foundation (NSF). Currently, he manages the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs. He has brought about many innovative changes to the small business programs assisting small business grantees to focus their research with an eye towards commercialization potential.

## Innovation through Partnership

- NSF research opportunities
- Proposal process for industry
- SBIR/STTR programs
- New frontiers in biotechnology
- Moving from research towards commercialization



## Electrophoretic Deposition – Opportunities & Barriers in Sintered Materials

- Electrophoretic deposition and possible applications
- Status of properties, products, materials, features
- Barriers, suggestions for monitoring the technology
- CISP actions to support member companies



## Dr. Randall M. German

Randall German is the Brush Chair Professor in Materials and Director of the Center for Innovative Sintered Products at Penn State. Professor German's publication list exceeds 700 articles covering materials processing and engineering design. He has authored twelve books, including Powder Metallurgy Science and Sintering Theory and Practice. He has also edited 19 books and holds 21 patents. He earned his PhD from the University of California at Davis.



## Dr. Robert Voigt

Dr. Robert Voigt is Professor of Industrial & Manufacturing Engineering at Penn State University. He received his PhD in Metallurgical Engineering from the University of Wisconsin in 1981. The major focus of his research is in the area of metal casting. Dr. Voigt has published more than 150 papers in the areas of solidification processing, alloy development, manufacturing process control, and dimensional control. He is a member of four American Foundry Society technical committees and is a Fellow of the Society of Manufacturing Engineers.

## Dimensional Precision and Conformance – A Metal Casting and P/M Perspective

- Factors influencing dimensional conformance
- How repeatability and reproducibility errors confound dimensions
- Interplay of tooling, set-up, powder characteristics, and process control
- Gains from a dimensional conformance study

# Program Highlights

- **Member Capabilities**
  - Industry Representatives
- **Industry Discussion Panel**
  - Target Markets:  
Are you hitting your mark?
- **Technical Sessions**
  - Research Project Updates
  - New Projects
- **NSF Funding Opportunities**
  - SBIR/STTR



# CISP Industry Member Meeting

## 10-11 May 2004

### 10 May 2004

- 1:00 Registration
- 1:30 Welcome – Rand German
- 1:40 CISP status report – Sharon Elder
- 1:50 Full Density Sintering of Stainless Steel – Ravi Bollina
- 2:10 Crack Detection in Green Compacts – Eric Hauck
- 2:25 Fundamental Limitations and Capabilities of High-density P/M – Guneet Sethi
- 2:40 Characterization of the Initial Melt Formation During Liquid Phase Sintering of Tungsten Heavy Alloys – Nick Erhardt
- 3:00 Break
- 3:30 Industry tutorial – TBA
- 3:45 Exploration of Net-shaping and Different Consolidation Techniques for Refractory Metals – Gaurav Aggarwal
- 4:00 The Effects of Incorporating *In-situ* Strength in Sinter Models – Debby Blaine
- 4:20 Testing & Services report – Lou Campbell
- 4:30 Industry capabilities
- 5:15 Social/poster session
- 6:15 Dinner
- 7:00 Recognition of achievements
- 7:10 Innovation Through Partnership – Kesh Narayanan, NSF SBIR Program Director
- 7:55 Closing – Plan for tomorrow

### 11 May 2004

- 7:30 Continental breakfast
- 8:00 Morning welcome and recap on meeting and Center – Rand German
- 8:15 Financial update – Judy King
- 8:25 Dimensional Producibility of High Precision Sintered Components – Bob Voigt
- 8:40 Application of Full-density Hard Coatings to Ferrous P/M Materials – Neal Myers
- 8:55 Multi-Axial *In-situ* Monitoring of Dimensional Changes using a Laser Dilatometer – Ryan Koseski
- 9:15 New projects proposed 2004 -2005
- 9:40 Thermal Analysis and *In-situ* Observation of Shape Loss During Polymer Burnout Process – Kumar Enneti
- 10:00 Industry capabilities
- 10:15 Break/poster session/meet the students
- 10:35 Electrophoretic Deposition – Analysis of Opportunities and Barriers in Sintered Materials – Rand German
- 11:15 Industry panel – representatives from industry – “Target Markets”
- 12:15 Lunch
- 1:30 Dimensional Precision and Conformance – A Metal Casting and P/M Perspective – Bob Voigt
- 2:30 General questions/closing comments/next steps/task items – Rand German
- 3:00 Regular meeting adjourned
- 3:10 Industry Council meeting
- 4:30 Meeting adjourned

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# Registration Form

Register me for the CISP Industry Member Meeting, 10-11 May 2004, Penn Stater Conference Center Hotel, Penn State Research Park, State College, PA.

Name \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State/Province \_\_\_\_\_ Country \_\_\_\_\_  
Telephone \_\_\_\_\_ Fax Number \_\_\_\_\_ E-mail \_\_\_\_\_

**10-11 May 2004**

I will attend:  10 May 2004  11 May 2004  Both Days

Fax or mail completed registration form by 4 May 2004 to:

Sharon L. Elder  
Executive Director

Center for Innovative Sintered Products  
147 Research West  
University Park, PA 16802

Fax: 814-863-8211  
Phone: 814-865-1914 (inquires)  
E-mail: CISP@psu.edu



**ACCOMMODATIONS:** There are a limited number of overnight rooms available for this meeting on a first-come, first-served basis for Monday, 10 May 2004. These rates are based on single/double occupancy and are subject to a room tax. Please make individual reservations at the hotel of your choice before 10 April, 2004. Reservations received after that date will be accepted only if space is available.

**Penn Stater Conference Center**

Penn State Research Park  
Phone: 800-233-7505  
E-mail: pshs@pshs.psu.edu

\$95.00 single or \$105.00 double

**Nittany Lion Inn**

200 West Park Ave.  
Phone: 800-233-7505  
E-mail: pshs@pshs.psu.edu

\$95.00 single or \$105.00 double

**Atherton Hotel**

125 S. Atherton St.  
Phone: 800-832-0132  
E-mail: atherton@statecollege.com

\$70.00 Single or \$80.00 double

(When registering use the reservation code CISP)

For additional information on the meeting, hotel accommodations and detailed maps visit our web site : [www.cisp.psu.edu](http://www.cisp.psu.edu)

## Map & Directions



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