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the YOUNG LEADER

The Newsletter of the TMS Young Leaders Committee

MEET A YOUNG LEADER: *BEN POQUETTE ON BUILDING A BUSINESS*

Ben Poquette can personally attest to the challenges of moving a new technology from the laboratory to successful commercial application as president of Keystone Materials LLC, a company he founded with the other inventors of the patent pending GraphiMetal™ coating process. (A detailed case study on GraphiMetal™ is posted in the Established Materials Community archive of Materials Technology@TMS.) Poquette offered the following perspectives and advice on building a technology business.

Q. How did Keystone Materials begin?
A. While still a PhD candidate at Virginia Tech, I was asked to co-advise a senior design team with my faculty advisor, Stephen Kampe. The team's project eventually focused on highly adherent metal coatings on graphite foam. By graduation, the students had submitted the application for a provisional patent. Roughly a year later, I joined Dr. Kampe to create Keystone Materials in an effort to scale up the GraphiMetal™ coating process and make it available for commercial and defense applications.

Q. What have been some of the key challenges in developing your business?
A. Having a technical background, the key challenge to me personally was the realization that the majority of our efforts would be consumed by business considerations, such as marketing and safety.

Q. What accomplishments with Keystone Materials are you proudest of so far?
A. We were able to bring our GraphiMetal™ coatings technology from laboratory to pilot scale manufacturing within the first 12 months of our existence with strictly private funding. Also, the ability of GraphiMetal™ coatings to facilitate high quality solder joining to graphite foam, using traditional solder fluxes and alloys. has generated significant interest from the private sector.

Q. What TMS resources have you found to be particularly helpful?
A. Networking, networking, networking. Even as an undergraduate student, I realized that the TMS membership is populated by great people, and being involved is your ticket to meeting those people.

Q. What advice would you give to others who are considering their own business?
A. Put together a solid team. Your product or idea may be outstanding, but it takes a great team to bring real success. It may be tempting to pull together a group of friends or even a group made up of strictly technical folks. However, both of these approaches can be a recipe for failure. Ideally, the team has members who trust each other, work well together, and have a complimentary mix of backgrounds and contacts. This, coupled with a strong leader, can make nearly any product successful.

LESSONS LEARNED FROM THE EMERGING LEADERS ALLIANCE

Preparing future engineering leaders for the challenges that they will face in advancing their organizations is the intent of the Emerging Leaders Alliance, launched in 2008. A joint venture of leading engineering societies, the Alliance offers a comprehensive leadership development experience culminating in a three-day Capstone Program.

As a partner organization of the Alliance, TMS was proud to send three of its young leaders to the Capstone Program in October 2009 (Figure 1). Said one of them, Don Siegel, University of Michigan, "The most valuable aspect of my experience was learning how to acknowledge the varied social styles of my peers."

Amy Clarke, Los Alamos National Laboratory, who also participated, said, "I am more aware of my leadership strengths and weaknesses and have identified areas for improvement that will result in personal growth, improve my ability to work effectively with others, and expand my future career opportunities."

"Participating in the Emerging Leaders Alliance truly exceeded my expectations," echoed TMS' third participant, Michele Manuel, University of Florida. "I know that the relationships that were fostered at this meeting will result in long-term professional partnerships."

Applications for the 2010 program start being accepted in the spring. For more information, go to the Emerging Leaders Alliance Web site at *www.emergingleadersalliance.org*.

Figure 1. TMS' representatives at the 2009 Emerging Leaders Alliance Capstone Program (left to right): Michele Manuel, Don Siegel, and Amy Clarke.

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A Young Leader is any TMS professional member in good standing age 35 or under. The goals of the TMS Young Leaders Committee are to recognize young professionals, develop in them an appreciation and awareness for TMS activities, provide services specifically tailored to young members, and encourage networking with TMS leaders and prominent society members. For more on TMS Young Leader activities, visit *www.tms.org/YoungLeaders/YoungLeaders.html.*

TMS YOUNG LEADER COMMITTEE OFFICERS

Gregory Thompson, Chair

Alpesh Shulka, Vice Chair

Ben Poquette, Secretary

Subhadarshi Nayak, Past Chair

TMS ANNOUNCES 2010 YOUNG LEADER PROFESSIONAL DEVELOPMENT AWARD WINNERS

Congratulations to the ten young professionals selected to receive the 2010 TMS Young Leader Professional Development Award. Chosen from each of the five TMS technical divisions, the winners receive support from the TMS Foundation to attend two TMS technical conferences and are provided with opportunities to become more involved with the Society and to network with TMS leadership.

Frank Balle
Light Metals Division
A junior scientist at the Center for Mathematical and Computational Modeling, University of Kaiserslautern, Germany, Frank Balle is currently researching innovative solid state joining techniques for light metals, as well as ultrasonic techniques for characterization of the monotonic and cyclic deformation behavior of composites. He holds a M.Sc. in mechanical engineering and a Ph.D. in materials science from the University of Kaiserslautern.

Weisheng Cao
Structural Materials Division
As a materials scientist with CompuTherm LLC, Weisheng Cao is researching the development of integrated computational tools for multi-component phase diagram calculation and materials property simulation, as well as thermodynamic, kinetic, and processing modeling for potential applications in industry. He holds both M.S. and Ph.D. degrees in materials science and engineering from the University of Wisconsin-Madison.

Nitin Chopra
Electronic, Magnetic, & Photonic Materials Division
Nitin Chopra is an assistant professor in the Metallurgical and Materials Engineering Department at the University of Alabama. His current research interests include nano/microfabrication, nanostructure growth, and nanoscale heterostructures. Chopra earned a B.S. degree in materials and metallurgical engineering from the Indian Institute of Technology and a Ph.D. in materials science and engineering from the University of Kentucky.

Rachel DeLucas
Extraction & Processing Division
Rachel DeLucas is a process engineer in the melting operations and SGQ plant at H.C. Starck. She holds an M.S. in manufacturing engineering from Boston University and a B.S. in archeology and materials from the Massachusetts Institute of Technology.

Sandip Harimkar
Materials Processing & Manufacturing Division
An assistant professor at Oklahoma State University, Sandip Harimkar holds a Ph.D. in materials science and engineering from the University of Tennessee and an M.S. in metallurgical engineering from the Indian Institute of Science. His research interests encompass the processing and characterization of advanced materials.

Paul Ohodnicki
Electronic, Magnetic, & Photonic Materials Division
Paul Ohodnicki is a research and development engineer with the vacuum coatings group at PPG Industries, where he works on new product development of large area glass coatings. He received a B.S. in both engineering physics and economics at the University of Pittsburgh and earned his Ph.D. in materials science and engineering at Carnegie Mellon University.

Andre Phillion
Light Metals Division
An assistant professor with the School of Engineering at the University of British Columbia, Andre Phillion previously worked as a post-doctoral fellow with the Computational Materials Laboratory at the Ecole Polytechnique Fédérale de Lausanne, Switzerland. His current research interests include developing new experimental and mathematical modeling tools to understand the relationships between microstructure and physical properties of multi-phase materials during phase transformations.

Doug Spearot
Materials Processing & Manufacturing Division
Doug Spearot is an assistant professor in the Department of Mechanical Engineering, University of Arkansas, where his research focuses on computational materials science, nanoscale material behavior, and multiscale structure-property relationships. He holds a B.S. in mechanical engineering from the University of Michigan and earned his M.S. and Ph.D. in mechanical engineering, with a focus on computational materials science, from the Georgia Institute of Technology.

Kinga Unocic
Structural Materials Division
Kinga A. Unocic is using advanced characterization techniques to study high temperature thermal barrier coatings and thermally grown oxides on metallic alloys as a research staff scientist with the Corrosion Science and Technology Group at Oak Ridge National Laboratory. She received her M.S. degree in metallurgical engineering from AGH-University of Science and Technology in Krakow, Poland, and her Ph.D. in materials science and engineering from Ohio State University.

James Yurko
Extraction & Processing Division
James Yurko is the co-founder, process development manager, and chief engineer of Electrolytic Research Corporation LLC. He received his B.S. in materials science and engineering from the University of Michigan and holds a Ph.D. in metallurgy, with a minor in business, from the Massachusetts Institute of Technology.