Updates on friends and colleagues in the materials community

Susan Abkowitz Receives the 2008 Titanium Applications Development Award

Susan M. Abkowitz was awarded the 2008 Titanium Applications Development Award by the International Titanium Association for pioneering the development and commercialization of CermeTi® metal-matrix composite materials. She became a TMS member in 1991.

Abkowitz is vice president of technology and operations at Dynamet Technology, Inc., in Burlington, Massachusetts, where she directs the research and manufacturing operations. She led the development of Dynamet's manufacturing technology and the commercialization of CermeTi for industrial and medical applications. Abkowitz earned her degrees from the University of Pennsylvania's School of Engineering and Applied Science and the Wharton School.

Her development of CermeTi has opened the door to many innovative applications for this highly wear-resistant titanium composite, according to the International Titanium Association. The manufacturing technology represents a technical breakthrough that combines titanium metal and alloy powders with TiC ceramic particulate. The powder consolidation by vacuum sintering and hot isostatic pressing provides a fully densified titanium metal-matrix composite offering wear resistance far superior to any commercial titanium alloy. Abkowitz oversees the development of the materials for military hardware. She has supervised a successful Small Business Innovative Research Phase II Army program targeted at the potential substitution of the titanium composite for track components and other lightweight vehicle structures. Abkowitz received the award in September 2008.

TMS REMEMBERS THOMAS O'KEEFE

In April, Thomas O'Keefe, a Curators' Professor Emeritus of Metallurgical Engineering at Missouri University of Science and Technology, passed away at the age of 72. A senior member of TMS, O'Keefe joined the society in 1964 and served on numerous boards and committees.

O'Keefe began work for Dow Metal Products after earning a bachelors degree in metallurgical engineering from Missouri School of Mines and Metallurgy in 1958. He remained at Dow Metal Products until 1961 when he returned to graduate school and earned a Ph.D. in metallurgical engineering from the University of Missouri–Rolla. From 1965 to 1999, O'Keefe was a faculty member in the Metallurgical Engineering Department at the University of Missouri–Rolla and a senior research investigator in the Materials Research Center.

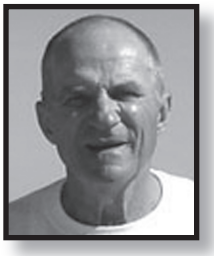
Over a span of 43 years, O'Keefe graduated more than 60 Ph.D. students, published 170 articles in refereed journals, had 11 United States and foreign-issued patents, and received numerous awards.

O'Keefe was also a member of AIME. In 1991, he served as the TMS-AIME Extractive Metallurgy Lecturer.

In Memory of TMS Member Frank Zanner, 1940–2008

Editor's Note: *This tribute was adapted from a submission by Rodney Williamson, Remelting Technologies Consulting*

In December, Frank John Zanner, retired distinguished member of the technical staff at Sandia National Laboratories and sole proprietor of Zantek Enterprises, passed away at the age of 68. He had been a member of TMS since 2007.



Zanner was renowned worldwide for his contributions to the melting and specialty metals. After earning an undergraduate degree at General Motors Institute of Technology, now Kettering University, in Flint, Michigan, he went on to obtain a Ph.D. in the field of metallurgical engineering from Rensselaer Polytechnic Institute. Zanner worked at Cameron Iron Works in Houston, Texas, and subsequently took a position at Sandia National Laboratories in 1970. While at Sandia, he founded the Liquid Metals Processing Laboratory, which is dedicated to process research in the areas of vacuum arc remelting, electro-slag remelting, vacuum induction melting, electron beam melting, and investment casting.

Zanner later acquired scientific knowledge of melt processes and transferred this knowledge to the specialty metals industry leading to major industry improvements in production practices. In 1989, he founded the Specialty Metals Process Consortium (SMPC). The SMPC is dedicated to pre-competitive research in the field of specialty metals processing and casting. The consortium has had up to 16 company members including all major producers of specialty metals in the United States. Zanner was also instrumental in founding the International Symposium of Liquid Metals Processing and Casting in 1994. The symposium is held every two years alternating between New Mexico and France.

After retiring from Sandia in 1999, Zanner continued to work as a consultant for the metals industry becoming the sole proprietor of Zantek Enterprises. His creativity and energy extended beyond his professional career as he enjoyed projects of major scope. Zanner made numerous invaluable contributions to the field of specialty metals processing and casting.

Meet a Member: Nikhilesh Chawla, Amateur Violin Virtuoso

By Francine Garrone

The sounds of Ludwig van Beethoven's famous Symphony No. 5 stream from Nikhilesh Chawla's car speakers each morning on his commute to the School of Materials at Arizona State University. As he listens, the melodies from the symphony's violins touch a personal chord for Chawla: he has played the violin, privately and with orchestras, since he was a boy.

Chawla, a professor of materials engineering, has been playing the violin for about 25 years and believes that not only drawing the bow across the strings, but listening to the music it produces is relaxing. "I love the sound and virtuosic nature of the violin," he said. "The concertos of Beethoven, Brahms, and Mozart are my favorites. From a materials science point of view, it is amazing how the microstructure of the wood impacts the quality of the tone of the violin."

Chawla became interested in playing the violin early in life. However, he faced many obstacles as a young musician. "My parents used to take me to classical concerts as a kid, and I really enjoyed them," he said. "I started playing the violin in the eighth grade. Unfortunately, my high school in Socorro, New Mexico, didn't have an orchestra at the time."

Having no organization to perform with near his home, Chawla's parents refused to let him give up one of his passions in life. "My parents would drive me 70 miles to Albuquerque, New Mexico, on Saturday mornings for orchestra rehearsals," he said. "This was followed by a private lesson with a member of the New Mexico Symphony after lunch."

Most of Chawla's teenage and young adult years were spent playing the violin with the Albuquerque Youth Orchestra, the University of Tennessee Symphony, and the University of Michigan Symphony. While with the University of Tennessee Symphony, he had the privilege of playing beside members of the Knoxville Symphony as part of the university's bicentennial celebration. The soloist was a soprano who had performed with the Metropolitan Opera in New York, he said.

Nikhilesh Chawla stands next to a plaque of Antonio Stradivari at the museo Stradivariano in Cremona, Italy. Stradivari was a great violin maker who lived in Cremona in the late 1700s.

Although Chawla chose to pursue materials engineering over the violin, the thought of expanding his musical background was never far from his mind. "I thought about doing a double major in music and materials engineering in college," he said. "To be honest, I think that while I loved to play the violin, I preferred to keep it as a hobby because materials engineering was my first love. The fact that the average engineer has better job prospects than a musician also steered me to that decision."

In 2004, Chawla and his wife, Anita, visited Cremona, Italy, the hometown of the great violin maker Antonio Stradivari. It was there that Chawla saw the details of Stradivari's wonderful craft of violin-making. "It was amazing to see how meticulously he crafted his violins and how beautiful their sound is, even centuries later," he said. Although Chawla believes his ability to make beautiful music is nothing more than a hobby learned in childhood, he does admit it has some science-like characteristics. According to Chawla, there are many commonalities between doing good science and playing good music, which includes a real love and devotion to the activity, discipline, a systematic approach, and, of course, practice, practice, practice.

Chawla hopes to continue to play the violin in the future. Although his career consumes much of his time, Chawla works to pass his love for the exquisite music it produces on to his son. "My two-year-old son, Kunal, really enjoys classical music. He already has his favorite tracks on the CD."

Each month, *JOM* will feature a TMS member and their activities outside the realm of materials science and engineering. If you have an interesting activity or know someone who does, contact Francine Garrone, *JOM* news editor, at *fgarrone@tms.org*.