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Spreading the Message

When Western Union announced that it would stop its 145-year old telegram service on January 27, 2006, it perhaps signaled the end of an era. It was with a tinge of sadness that I read this newspaper story. The images imprinted in my mind of "westerns"—with a dusty main street, gun-toting cowboys, and the omnipresent telegraph office with an elderly gentleman feverishly tapping in a "SOS" message of the town just taken hostage by a bunch of "bad guys"—will become only childhood memories. The dots and the dashes of the telegraph will be replaced by ones and zeros of communication devices in a new digital era. It is almost easy

to overlook this tech revolution which has quietly taken place over the last couple of decades. Do the young people today even recognize relics of an old era such as the telegraph, the typewriter, or the cassette player? Equally surreptitious has been the penetration of many new materials into the marketplace. Plastics (remember the famous line in the movie, "The Graduate"?) ushered in a materials revolution in the 1970s and now, new families of nanostructured materials are having an impact on the quality of life and experiences in the 21st century. A few examples are dent-resistant truck beds made of nanocomposites; nanoceramics boosting efficiency in aircraft turbines; lighter and more powerful tennis rackets and golf equipment made of composites containing carbon fibers; lighter flat-panel displays and monitors; brighter traffic lights; and the list goes on. Nanotech certainly has not been all hype.

But how well have we in the scientific and engineering community conveyed the message to the public that science and technology are the engines that drive technology growth? How well we tell the story of science and technology successes (such as the ones listed above) to the public and to the politicians, will have an impact on the availability of resources for educating and training new generations of scientists and engineers. This topic was featured on the cover of a recent Time magazine (February 13, 2006). Issues such as global warming, the environmental impact of fossil fuel use, and energy independence have all struck a chord with the public; and so research topics such as fuel cells, hydrogen generation, and solar energy conversion perhaps are no longer viewed as esoteric pursuits of scientists and engineers in their ivory towers. Thus I was very enthused to see another recent cover story in the business media ("Why Math Will Rock Your World," Business Week, January 23, 2006). The gist of this story is that while quantitative analysis turned Wall Street upside down a generation ago, mathematicians and computer scientists ("quants") are now making an impact in a variety of sectors ranging from food/beverage, advertising, marketing, and media, to security and intelligence.

The members of ECS can certainly do their part in sharing these success stories with new generations of students who are pondering their career options. This special issue of the magazine was designed with a view to convey a sense of the overarching mission of the various Divisions within ECS and their exciting technical activities to various constituencies including students, educators, industry executives, and government policymakers at all levels. There are thirteen "stories" in the pages that follow. Many thanks are due to the writers, to the members of the Interface Advisory Board for seeding the ideas that led to this issue, and of course to each one of you for reading. Stay tuned.

Raj K.
Krishnan Rajeshwar
Editor

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