

ranged from synthesis to characterization techniques and to devices. Mechanisms of growth of extra long CNTs (Y. Zhu, NCSU), helical tubes (P. Bandaru,

UCSD), and structurally aligned tubes (among others, H. Ago, Kyushu Univ. and J. Rogers, UIUC) were presented in Symposium JJ, but also approaches for

identification and separation of metallic and semiconducting SWNTs were presented (A. Naumov, Rice Univ. and Z. Bao, Stanford).

In terms of applications, great promise is shown by the enhanced mechanical properties yielded by CNTs in composites and fibers; CNT-based devices, including TFTs (Q. Cao, UIUC and A. Franklin, Purdue); bolometers (D. Santavica, Yale); and field emitters (L.S. Nicolas, Thales R&T, Palaiseau, France). These advances were discussed with emphasis on manufacturability. Applications of elemental (e.g., Si) and compound (e.g., ZnO, GaN) nanowires were also discussed with emphasis on energy-harvesting applications.

The newest family member of these nanostructures, graphene, is of great interest. Novel approaches for high-yield synthesis of graphene nanoribbons were described (e.g., A. Reina, MIT and Hernandez, Trinity College Dublin); electrical and mechanical characterization studies (among others D.B. Farmer, IBM, and C. Lee, Columbia) illustrated both the potentials and the challenges of graphene. Different approaches to open a bandgap in graphene and obtain a novel semiconducting material with exceptional electronic properties were discussed.

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## Transport Properties in Polymer Nanocomposites Discussed

*(See MRS Proceedings Volume 1143E)*

Polymer nanocomposites are increasingly showing promise for a variety of applications such as energy storage, sensors, separation membranes, and lightweight components. The goal of Symposium KK on Transport Properties in Polymer Nanocomposites was to highlight the numerous advances in altering the ionic, molecular, electrical, and thermal conductivity of composite materials. J. McGrath (Virginia Tech) and A.M. Herring (Colorado School of Mines) showed improvements in proton exchange membranes for fuel cells with ionic block copolymers and polyoxometalates, respectively. Enhancements in gas transport properties were demonstrated for oriented SWNT composites (E. Marand, Virginia Tech) and for metal oxide particles containing polymer composites (N.K. Lape, Harvey Mudd College). Conversely, A. Hiltner (CWRU) described the production of gas impermeable membranes by a unique multilayer extrusion process that resulted in highly crystalline confined polymer nanolayers, and a few other presenters showed improved barrier properties through highly oriented, high aspect ratio fillers.

## Graduate Students Receive Gold and Silver Awards

Graduate Student Awards were announced during an evening ceremony on December 3 at the 2008 Materials Research Society Fall Meeting in Boston. **Dirk R. Englund** (Stanford University), **Zekeriyya Gemici** (Massachusetts Institute of Technology), **Srikanth Singamaneni** (Georgia Institute of Technology), and **Brian Timko** (Harvard University) received the **Gold Graduate Student Awards**.

The **Silver Graduate Student Awards** were awarded to **Peter M. Allen** (Massachusetts Institute of Technology), **Jessica E. Bickel** (University of Michigan), **Eric Bousquet** (Liegge University), **Qing Cao** (University of Illinois, Urbana-Champaign), **Michael Currie** (Massachusetts Institute of Technology), **Tal G. David** (Ben-Gurion University of the Negev), **Irene A. Goldthorpe** (Stanford University), **I. Sedat Gunes** (University of Akron), **Yeonwoong Jung** (University of Pennsylvania), **Choongik Kim** (Northwestern University), **Philseok Kim** (Georgia Institute of Technology), **Kedarnath Kolluri** (University of Massachusetts, Amherst), **Zhuang Liu** (Stanford University), **Mark D. Losego** (North Carolina State University), **Nikhil Medhekar** (Brown University), **William D. Pysz** (University of Delaware), **Chunguang Tang** (University of Connecticut), **Bozhi Tian** (Harvard University), **Masaru Tsuchiya** (Harvard University), **Thomas Z. Ward** (University of Tennessee), **Vanessa Wood** (Massachusetts Institute of Technology), **Ke Xu** (California Institute of Technology), and **Xin Xu** (Princeton University).



Recipients of the **Gold Graduate Student Award**.



Recipients of the **Silver Graduate Student Award**.