Joel Schindall, Ph.D.

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Professor Schindall re-joined the MIT faculty in June of 2002 after a 35 year career in the defense, aerospace and telecommunications industries. His research includes the invention and development of a nanotube-enhanced ultracapacitor which holds the promise of being superior to electrochemical batteries as a means of efficient regenerative electrical energy storage, and he has also supervised research on dynamic simulation and reliability analysis of complex safety-critical systems. He has co-developed and taught a required senior course in communication skills, including units on conceptual thinking, giving presentations, how to be effective in industry, cross-cultural skills, and engineering ethics, and he is developing a course on engineering design. As co-director of the Bernard M. Gordon - MIT Engineering Leadership Program, Dr. Schindall is actively engaged in a program to enhance, expand, focus, and disseminate the teaching of engineering design and leadership within the MIT School of Engineering.

Prior to joining MIT, Dr. Schindall was VP and Chief Technology Officer of Loral Space and Communications (a manufacturer and operator of commercial satellites), Sr. VP and Chief Engineer for Globalstar (a 48 satellite LEO mobile phone system), and President of Loral Conic (a manufacturer of telemetry systems for missiles and satellites). Dr. Schindall received his B.S., M.S. and Ph.D. degrees in Electrical Engineering from MIT in 1963, 1964 and 1967. During his graduate years he was lecturer and wrote the text for a 140 student introductory electronics course, he received an award for excellence in teaching, and he was chief engineer for WBCN, a commercial FM radio station.

Project Titles:

Carbon Nanotube Enhanced Ultracapacitor
http://www.rle.mit.edu/schindall/documents/RU13_Oct05.pdf

Double Layer Capacitors: Automotive Applications and Modeling
http://www.rle.mit.edu/schindall/documents/double_layer_capacitors_poster.ppt

News Articles:

Popular Mechanics:
MIT Builds Efficient Nanowire Storage to Replace Car Batteries
http://www.popularmechanics.com/science/research/4252623.html

IEEE Power Electronics Society Newsletter:
"What's in a Name? A New Model for Regenerative Electrical Energy Storage
http://www.rle.mit.edu/schindall/documents/PELSJan08Issue_3_PAGES.pdf

IEEE Spectrum for Tech Insiders:
"The Charge of Ultracapacitors"
http://www.spectrum.ieee.org/nov07/5636

The Economist:
"Ne Plus Ultra. A new version of an old idea is threatening the battery industry"
http://www.economist.com/science/displaystory.cfm?story_id=10601407

Saying goodbye to batteries
http://web.mit.edu/erc/spotlights/ultracapacitor.html

Super Battery
http://www.sciencentral.com/articles/view.php3?type=article&article_id=218392803