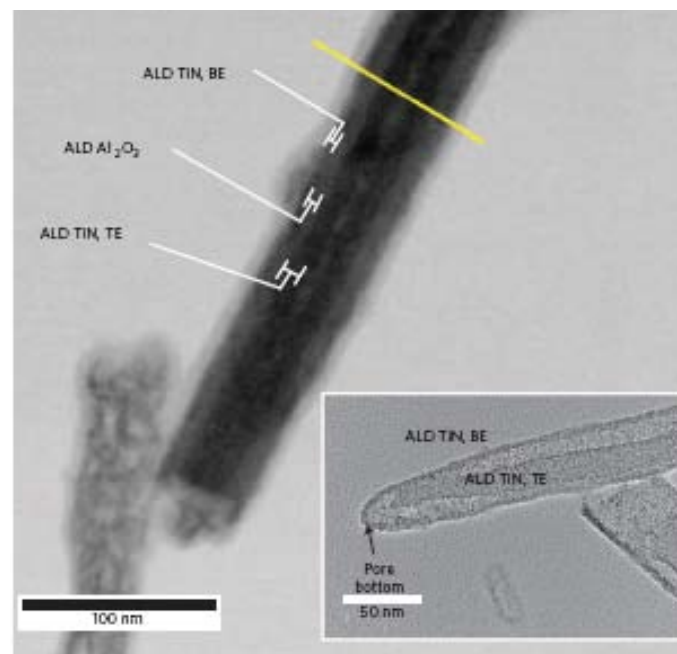
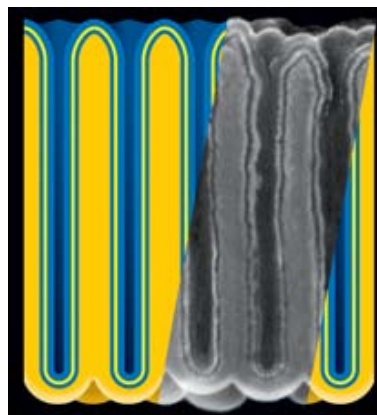
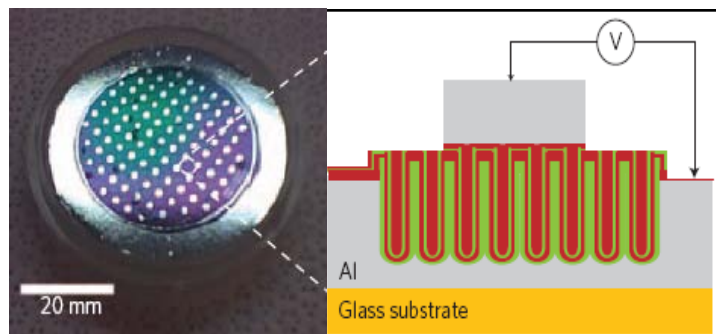


University of Maryland NSF-MRSEC Highlight: Electrostatic Nanocapacitors for Electrical Energy Storage

P. Banerjee, I. Perez, L. Henn-Lecordier, S.B. Lee, G.W. Rubloff

UMD-MRSEC researchers have combined self-assembled nanopores in anodic aluminum oxide (AAO) with multilayer self-limited atomic layer deposition (ALD) to form massive arrays of electrostatic nanocapacitors, achieving energy density >10X higher than conventional electrostatic devices, comparable to electrochemical supercapacitors, while retaining the high power advantages of electrostatics.



AAO nanopore 50nm dia
ALD TiN BE 6.7nm
ALD Al₂O₃ 7.0nm
ALD TiN TE 9.3nm