BILKENT UNIVERSITY

unam - INSTITUTE of MATERIALS SCIENCE & NANOTECHNOLOGY

FACULTY OF SCIENCE

MATERIALS SCIENCE and NANOTECHNOLOGY GRADUATE PROGRAM SEMINAR

"Drawing Nanostructures"

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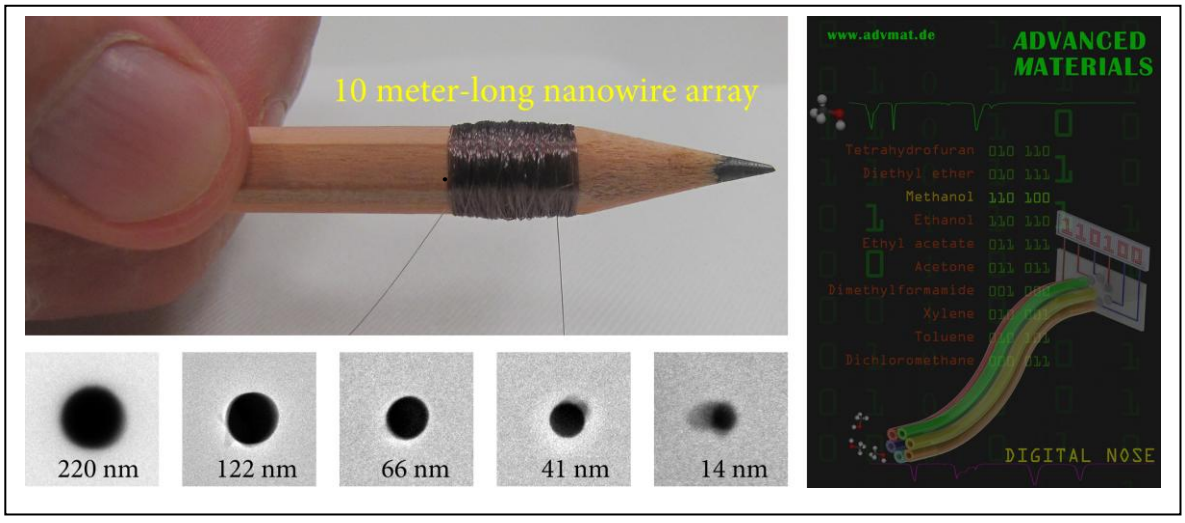
In this talk, I will present **fiber making** as a nanofabrication technique. I will use examples from nanowire research and optofluidics to demonstrate the potential of functional 1D nanostructures that can be by fiber drawing,

1. In nanowire/nanotube fabrication: We have recently developed a new method, size reduction by thermal drawing, to produce indefinitely long, ordered nanowire and nanotube arrays. Materials used are Sulphur, Selenium and Tellurium based amourphous semiconductors, polyvinylidene fluoride and various high temperature engineering polymers. Examples of these unusual nanostructures will be shown, their physical properties and possible uses will be discussed.

2. In optofluidics channel fabrication: Fiber drawing was used to produce a microfluidic fibers with the capability of selective infrared light transmission. The fibers are used as a cross responsive sensor array for sensitive (nanomolar) and selective (potentially hundreds of analytes and their mixtures) differentiation of volatile organics. Statistical analysis reveals that infrared absorption based transducing with optofluidic fibers can be used as a real time electronic nose. I will also venture into the possible scientific visualization of complex metabolic processes underlying disease onset and pharmacological response from exhaled breath with such an electronic nose.



Date : February 18, 2011 (Friday)
Time : 15:40
Place : Faculty of Science Building, A Block, Seminar Room (SA 240)

Tea will be served after the seminar