KOLOKVIJ FIZIČKOG ODSJEKA

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Why are we so excited about carbon nanostructures?

Mildred Dresselhaus
Department of Electrical Engineering and Computer Science
and Department of Physics
Massachusetts Institute of Technology
Cambridge, Massachusetts 02139

There is much current excitement about the interesting new physics and unusual physical properties of carbon nanostructures, particularly carbon nanotubes and graphene. A brief review will be given of the physical underpinnings of carbon nanostructures that were developed over the past 60 years, starting with the electronic structure and physical properties of graphene and graphite, and then moving to graphite intercalation compounds which contained the first carbon nanostructures to be studied experimentally. Liquid carbon studies were precursors to the fullerene family of nanostructures and vapor grown carbon fibers were precursors to carbon nanotubes. Particular emphasis is given to the recent developments on the hot topic of graphene and graphene ribbons focusing on recent advances we have made in studying edges in graphene. Perspectives on future research directions for carbon nanostructures are presented.

Voditelj seminara FO Hrvoje Buljan, hbuljan@phy.hr
