

International Conference on
MATERIALS RESEARCH AND DEVELOPMENT

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Ambient mechano-chemical reactions [MCRs] between functionalized CNTs leading to 2D graphenes /and MCRs between functionalized graphenes leading to 3D consolidation of graphene

Extensive studies have shown that CNTs can be modified appreciably via decorating their surfaces with functional groups. What is lacking is how this functional group interacts in the solid state. The presentation reports; The room temperature solid-state MCRs between different CNTs functionalities such as COOH/OH, COCl/NH₂ leading to CNTs unzipping and formation of 2D grapheme, The room temperature consolidation of graphene via MCRs of differently

functionalized graphenes, The 2D and 3D products of the two different types of MCRs are characterized using Raman ,IR and XPS spectroscopy together with scanning electron microscopy [SEM]and tunnel in electron microscopy [TEM] and the proton transfer hydrogen-bond activation mechanism of the reactions are supported with theoretical models and computer simulations.

Biography

Ahmad Kabbani holds a PhD in physical chemistry from the University of California Davis (1979). He is a NIH Scholar at UCD Davis in 1987. He worked as a Research Scientist at Rice U in 2007. He taught crystallography /diffraction graduate course in 2012-2013 at Rice U. At present he is a full Professor of chemistry at the Lebanese American U- Beirut Lebanon.

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