



Materials Science Seminar
21/11/2019 2.30 pm
Grassano room
Physics Department
Sogene Building



Si(O)(C)- and ZnO-based nanosystems for nanomedicine applications

G. Salviati, IMEM-CNR, Parco Area delle Scienze 37/A, 43124 Parma, Italy

A partial overview of both fundamental and applied research activity carried out at IMEM-CNR on Si(O)(C) and ZnO nanostructures chemically functionalized for energy and nanomedicine applications will be presented.

Concerning energy applications, the Sulfur inclusion modification of optical emissions of ZnO mesoporous nanobelts will be presented. Then the use of hierarchical (Co₃O₄)-functionalized vertically-aligned SiC NW array for efficient and robust oxygen evolution electro catalysis and MnO_x-decorated carbonized porous Si NW electrodes for high performance supercapacitors will be shown.

As for nanomedicine applications, the efficacy of CeF₃-ZnO scintillating nanocomposite for self lighted photodynamic cancer therapy will be discussed. Further, the Recovery of Cardiac Impulse Propagation In Ischemic Rat Heart via SiC-NWs as well as the use of high energy and soft X-ray irradiation to activate Near Infra Red Photo Induced Therapy to treat deep solid tumors will be reported.