Faculty of Engineering
Tokushima University

Field Electron Emission studies of Nanostructures

Assistant Professor Pankaj Koinkar

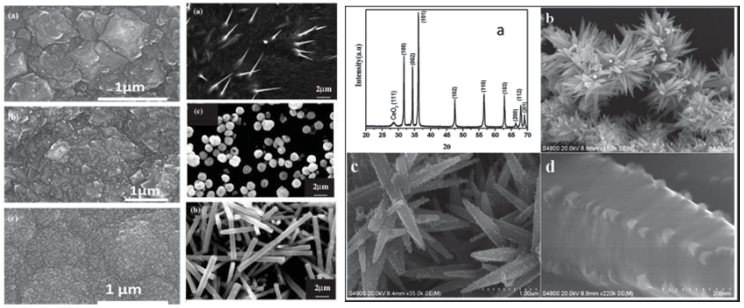

Figure (a) : Surface morphology of various nanostructures

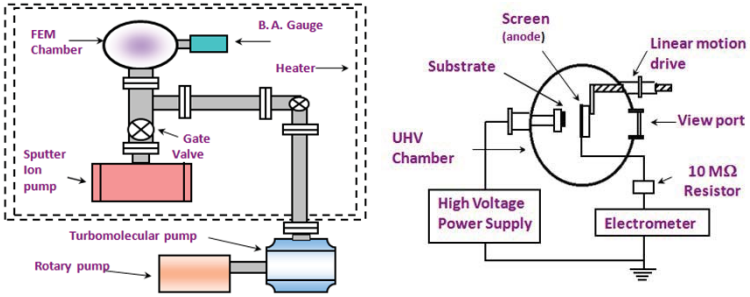

Figure (b) : Field Electron Microscope set up

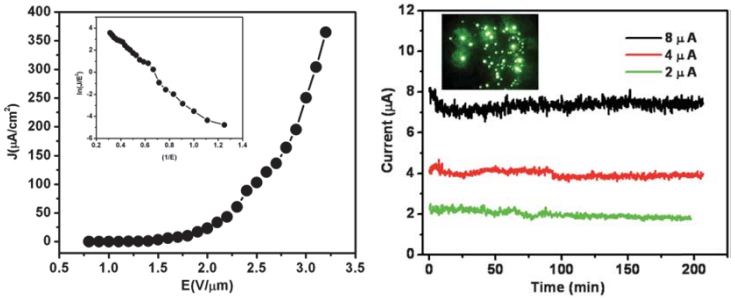

Figure (c) : Typical I-V and I-T plots with emission image

Content:

The deposition of nanomaterials (such as diamond, carbon nanotube, oxides) and employ different surface treatments to study electrical properties as shown in figure (a). The surface treatment leads to favored surface properties useful for electrical properties.

The field emission studies from various nanomaterials like Carbon nanotubes, ZnO, SnO, GaN, InN and to investigate the effect of the structural modification on the field emission characteristics. We have carried out field emission investigations on PANI (nanofibers, nanotubes). The field emission (FE) current versus applied voltage (I–V) and emission current versus time (I–t) characteristics were measured in planar 'diode' configuration in an all-metal vacuum chamber evacuated to a base pressure of $1x10^{-8}$ mbar as shown in figure (b) and (c).

The promising field emission properties exhibited by nanostructures lead them to play excellent role in field emission displays (FEDs).

Keywords : Nanostructures, Field emission, Field emission displays

E-mail: koinkar@tokushima-u.ac.jp
Tel. +81-88-656-7643
Fax +81-88-656-7643

HP: http://pub2.db.tokushima-u.ac.jp/ERD/person/164626/profile-en.html