

Spectroscopia Raman metoda utila pentru evidentierea functionalizarii nanotuburilor de carbon

Institutul National de Cercetare Dezvoltare pentru Fizica Materialelor / Colectiv Optica

M. Baibarac, I. Baltog, L. Mihut, T. Velula, M. Scocioreanu, I. Smaranda, I. Gontia

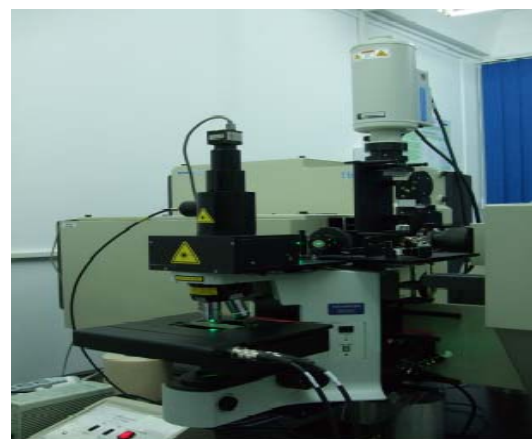


www.imt.ro/NANOPROSPECT

FT Raman RFS 100/S Bruker



Raman T64000, Jobin Yvon



Laseri
(nm)

1064

676

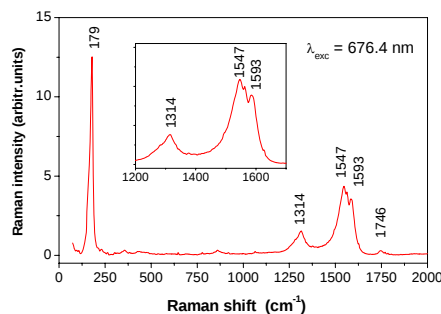
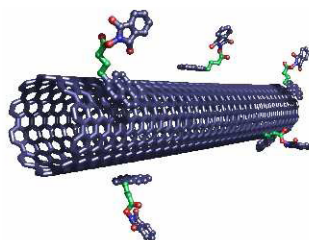
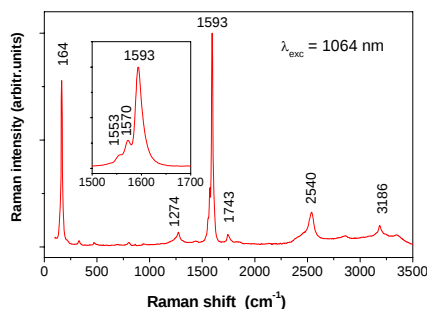
647

514

488

476

458



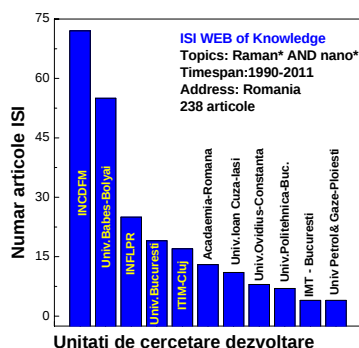
Contributiile INCDFM in domeniul spectroscopiei Raman pe nanotuburi de carbon (NC) vizeaza :

i) **procesele de intercalare/functionalizare** - Carbon 40, 2201, 2002, J. Nanosci. Nanotech. 9, 6204, 2009, Phys. Rev. B 65, 235401, 2002
ii) **procese de dopare *n* si *p*** - Synth. Met. 144, 133, 2004, Diamond & Rel. Mater. 17, 1558, 2008

iii) **procesele optice neliniare** - Phys. Rev. B 72, 345402, 2005, J. Phys. Cond. Mater. 20, 275215, 2008

iv) **caracterizarea materialelor compozite de tip organic/anorganic** - NC functionalizate covalent cu:

a) polimeri conductori de tip polianilina, polipirol, poli N-vinil carbazol, poli(3,4-etilendioxitiofen), polibitiofen, etc. - Chem. Mater. 15, 4149, 2003, Carbon 42, 3143, 2004, Polymer 48, 5279, 2007, J. Mat. Chem. 19, 5690, 2009, Carbon 47, 1389, 2009, Mat. Sci. Eng. B 176, 110-120, 2011
b) polimeri izolatori de tip poli stiren, poli metil metacrilat - Diamond & Rel. Mater. 17, 1380, 2008, Current Organic Chemistry 15, 1160-1196, 2011
iv) **caracterizarea materialelor compozite de tip anorganic/anorganic** - ZnO/SWNTs - J. Phys Condens. Matter, 21, 445801, 2009



Hirsch index = 24

Carti: i) M. Baibarac, I. Baltog, S. Lefrant, Chapter 5. Composites based on conducting polymers and carbon nanotubes, in "Nanostructured Conductive Polymers", editor Ali Eftekhar, John Wiley & Sons., 209-260, 2010; ii) I. Baltog, M. Baibarac, S. Lefrant, Chapter "Surface enhanced Raman scattering of carbon based nanomaterials" in Encyclopedia of Nanoscience and Nanotechnology, editor H.S. Nalwa, American Science Publishers, 15, 2010