Abstract Submitted for the MAR16 Meeting of The American Physical Society

Spectroscopic Studies on Graphenes Dispersed Within Polymeric Matrices¹ FILIPE FERREIRA, FELIPE BRITO, Instituto Tecnolgico de Aeronutica, So Jos dos Campos-SP, Brazil, DORINA CHIPARA, The University of Texas Rio Grande Valley, PULLICKEL AJAYAN, Rice University, WESLEY FRAN-CISCO, Instituto Tecnolgico de Aeronutica, So Jos dos Campos-SP, Brazil, CRIS-TIAN CHIPARA, Rice University, EVELYN SIMONETTI, Instituto Tecnolgico de Aeronutica, So Jos dos Campos-SP, Brazil, CHARLES CARTWRIGHT, The University of Texas Rio Grande Valley, LUCIANA CIVIDANES, Instituto Tecnolgico de Aeronutica, So Jos dos Campos-SP, Brazil, JAMES HINTHORNE, The University of Texas Rio Grande Valley, GILMAR THIM, Instituto Tecnolgico de Aeronutica, So Jos dos Campos-SP, Brazil, ROBERT VAJTAI, Rice University, MIRCEA CHIPARA, The University of Texas Rio Grande Valley, INSTITUTO TECNOL-GICO DE AERONUTICA COLLABORATION, THE UNIVERSITY OF TEXAS PAN AMERICAN COLLABORATION, RICE UNIVERSITY COLLABORATION — Graphenes have been dispersed within various polymeric matrices (polyethylene, polyethylene oxide, polyetyrene, and epoxy resins). Some have been used as purchased (pristine and functionalized graphene platelets from Cheap Tubes). Pristine and functionalized graphene oxides have been obtained in laboratory according to W. Hummers, R. Offeman, ("Preparation of Graphitic Oxide". J Am Chem Soc 80, 6, 1339, 1958) and by original functionalization processes. All these samples were investigated by Raman spectroscopy using a Renishaw InVia spectrometer operating at 532 and 785 nm. Additional information has been obtained by Wide Angle X-Ray Scattering using a Bruker Discover 8 spectrometer. Raman spectra have been fitted by a convolution of modified Breit-Wigner-Fano line shapes and the main parameters (position, intensity, width, asymmetry factor) of each line are discussed. The research aims to a better identification of graphene related nanostructures isolated or dispersed within polymeric matrices by Raman spectroscopy. Univ of Texas, Pan American Dorina Chipara

¹FAPESP (Grant 2013/20218-0) and CNPq (Grant 141197/2014 5) for financial Date submitted: IQS SALVED and LEFE/UNESP for collaboration. Electronic form version 1.4