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and single-walled carbon nanotubes (SWNTs) embedded in this conducting polymer, which were synthesized by oxidative polymerization. Langmuir-Schaefer (LS) films were fabricated at the air-water interface. Experimental data showed that the synthesized materials were able to detect carbon dioxide (CO2) via nanogravimetric method. Aim of this work is to investigate the behavior of POTO and related nanocomposites in presence of CO2. For this reason, nanogravimetric measurements were performed in a dedicated chamber filled with dioxide flux. Single acquisitions were performed and tests carried out demonstrate that these materials are suitable for applications as sensors for dioxide. (E) The Role of π-π Interactions in the Charged Species Stabilizations of Conjugated Polymers for Nanoelectronics, where the interchain interactions of π-conjugated polymers, poly(2,6-pyridinylenevinylene)-co-[(2,5-dioctyloxy-p-phenylene)vinylene] or PPyPV, are investigated by UV-Vis absorption spectroscopy. The PPyPV is a Lewis base and can be doped by strong and weak Lewis acids. The interchain interactions seem to play a fundamental role only in charged states. The basicity strength of the PPyPV depends on the polymer interchain interactions, as the polymer concentration is increased, a Kb increment is observed, reversal a decrease of polymer concentration lowers the Kb of the PPyPV. The organization of the polymer chains plays a fundamental role in the doping process.With the aim of developing enhanced chemical sensors, the influence of different multi-walled carbon nanotubes (MWNTs) on the physical and chemical properties of poly-o-ethoxyaniline (POEA) nanostructured films was investigated. It was found that the presence of MWNTs in POEA enhances the interaction between the aromatic structure of the poly(o-ethoxyaniline) and the basal plane of the MWNT graphitic surface via π-stacking, affecting the vibrational modes of the polymer, along with an improvement in the thermal stability and surface morphology.

Biography

Claudio Nicolini received the doctoral degree in physics from the University of Padua, in 1967. After serving as Adjunct Professor at the University of Bari, he moved for 17 years to the United States, of which he became citizen since 1974, and was originally at Brown University, MIT, and BNL. He then moved to Temple University School of Medicine, Philadelphia, where after a period of intensive training and research in pathology he became Associate Professor of Pathology and then Professor and Chairman of the Biophysics in 1976. In 1985, he was called as "eminent scientist" to the Chair of Biophysics of the University of Genoa, in Italy until 2012, where he was successively Director of Biophysics Institute, DISTBIMO and CIRSDNNOB. From 1993 until now is Life President of the Fondazione ELBA Nicolini and of the Nanoworld Institute. On 2008 has been elected as a Foreign Member of the Russian Academy of Sciences and on 2010 Honoris Causa Professor of Biophysics and Nanobiotechnology at Moscow State University. He was Chief Editor of Cell Biophysics (USA), Science and Technology Advisor to Italian Prime Minister Craxi, Member of the National Science and Technology Council upon Parliament election, Scientific Director Industrial Consortium CIREF, Founder Technobiochip; President Polo National Bioelectronics , President Scientific Technological Park of Elba Island. He received several awards and prizes and has authored more than 480 publications in international scientific journals (SCI), 35 patents (WPI), 28 books and Series Editor in Bioelectronics (Plenum) and Nanobiotechnology (Pan Stanford). His main scientific activities concerned cancer research, biophysics and nanotechnology, pioneering world-wide chromatin structure-function, bioelectronics and nanobiotechnology.

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