Electroactive polymer and polymer composites offer large application potential in areas such as sensors and actuators, energy generation and storage, filtration membranes and biomedical applications, among others. Many of the applications rely both in the ability to properly tailor polymer properties, including microstructure, crystallinity and phase, and/or in the suitable choice of micro and nanofillers. In this talk the main properties and characteristics of electroactive polymer will be presented. The strategies to properly process material with tailored properties as well the reasons and strategies for the development of specific composites will be shown. After the presentation of some of the most interesting applications, the main challenges and future directions in this research field will be outlined.
Short CV:

Professor Lanceros-Mendez graduated in physics at the University of the Basque Country, Leioa, Spain, in 1991. He obtained his Ph.D. degree in 1996 at the Institute of Physics of the Julius-Maximilians-Universität Würzburg, Germany. He was Research Scholar at Montana State University, Bozeman, MT, from 1996 to 1998 and visiting scientist at the A.F. Ioffe Physico-Technical Institute, St. Petersburg, Russia (1995), Pennsylvania State University, USA (2007) and University of Potsdam (2008). Since September 1998 he has been at the Physics Department of the University of Minho, Portugal, where he is associate professor and since 2012 he is also associate researcher at the INL – International Iberian Nanotechnology Laboratory. His work is focused in the area of polymer based smart materials for sensors and actuators, energy and biomedical applications.