INCT on Carbon Nanomaterials
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The mission of the Institute of Science and Technology on Carbon Nanomaterials is the development and divulgation of science, technology, and innovation associated with carbon nanotubes, fullerenes, graphene, and other two-dimensional materials, and to the formation and qualification of researchers in the field at the undergraduate and graduate levels. In its new term, the Institute is formed by 26 Research Institutions, Universities and Companies belonging to nine different states in Brazil. The new team shows a quantitative growth compared to the first term (2009): the number of companies-member increased from two to five, and also an increasing interest by companies for specific solutions of technological problems. Our team has been pioneer in Brazil in the study of the science and applications of carbon nanomaterials and 2D materials. In the group there is people working in the synthesis, purification and functionalization of carbon nanotube and graphenes, scientists working with fundamental properties of carbon nanostructures and 2D materials, researchers performing theoretical models and simulations about these materials, and others developing materials, devices and applications such as nanocomposites for oil and cement industries, and several types of sensors. The INCT on Carbon Nanomaterials has also a group working in the field of toxicology of carbon nanomaterials, and its applications in the biomedical field. The several companies associated with our proposal present specific demands, such as: cement with improved mechanical properties through association with nanotubes (Intercement and Petrobras), insulating materials with improved mechanical strength (Votorantim and Magnesita), among others. We present in this talk a resume of the main contributions of the INCT on Carbon Nanomaterials in the last two years and the perspectives of developing high quality research and applications in the next few years, trying to continue the international competitive position of the investigations done within the Institute.