Max Bergmann Lecture

Speaker: Prof. Ross Rinaldi, Professor in Condensed Matter Physics
Università del Salento, Lecce, Italy

Title: Lab-on-Chip and biochips for genomics, proteomics and cellomics

Abstract: The combination of Nanotechnology and Biotechnology and their application to healthcare has opened up in the last year a new field called “Nanomedicine”, leading to clinical solutions within preventive medicine, diagnosis, therapy and follow-up care. In recent years, miniaturization of biosensors and their integration in microarrays and functional bio-chip/Lab on-a-chip (such as DNA, protein and cell chips) enabled massive parallel detection of diseases and disease susceptibility, as well as to identify personalized drug response profiles. They are faster, simpler and cheaper than traditional methods, by analyzing in parallel large numbers of biological molecules (nucleic acids, proteins) and cells. Such approaches, mainly based on specific biorecognition mechanisms, have been shown to be particularly promising, as they are the only techniques which open the interesting possibility to perform highly parallel analyses (high throughput screening) and studies of biomolecular interactions, also at the level of single molecules. Several strategies exploiting nanotechnological/nanofabrication techniques have been explored to this purpose and can promote the development of novel and powerful investigation tools. All these techniques and some targeted specific applications in the field of biochips and biosensors and Lab-on-Chip for Point of Care (POC) diagnostics will be presented in the seminar.

Date: May 7, 2015 at 5 pm

Place: Max Bergmann Center Dresden, Budapester Str. 27
Seminar Room B 1, Ground Floor

Host: Prof. Dr. Gianaurelio Cuniberti
Chair „Materials Science and Nanotechnology“
Institute for Materials Science, TU Dresden