

## 2009

### **International projects**

- **“Highly Ionised Pulse Plasma Processes”** (2009-2013), COST MP0804

The project was carried out together with research institutions from Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Lithuania, Netherlands, Poland, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom.

Meetings of the participants took place with the aim to exchange of experience and to look for partners for the possible FP7 projects.

### **Self-supporting projects**

- **“Optimization of Electrochemical Polishing of Co-Cr Alloy Implants and Search for Technologies of Local “Lotus” Effect Zones Formation on the Surface of Co-Cr Alloy Implants”** (2009), research contract with JSC Implantatas

During the experiments with electrochemical polishing of cobalt-chrome alloys, new electrolyte on the basis of methane sulphuric acid was created, which guarantees high polishing quality. Requirements for surface geometry and chemical composition, which might have “Lotus effect”, were analysed theoretically. Analysis of superhydrophobic surfaces formation methods was done. During experiments superhydrophobic surfaces were formed on glass plates, demonstrating possibility to create coatings, which can have a contact angle higher than  $170^{\circ}$ .

- **“Photolithographic Processes for Fabrication of THz Emitters and Detectors: Investigations and Optimisation”** (2009)

Research on the best regimes of the fabrication of electrodes of the necessary pattern of the THz emitters and detectors was continued. Trial fabrication of the THz emitters and detectors of the novel configuration was performed.