

2003

International projects

- **“Nano-Structured Functional Coatings for Optical and Lubricating Applications”** (2003-2005), NATO Science Programme - Cooperative Science and Technology.

The project was carried out together with Institute of New Materials of Saarland University, Germany.

Germanium nanowires were CVD grown on 2D microstructured Si substrates having catalytic Ni and Au coatings.

- **“Mechanical Properties of Thin Films”** (2003-2004), research programme “Gillibert” .

The project was carried out together with Poitiers University (France).

Electronic speckle pattern interferometer was used to register the dynamics of changes of small geometrical dimensions samples. Software and optical interferometer was optimised for high strain measurement using polymeric and metallized polymeric layers. Technology of free standing metal films was employed for the forming of multilayer metal structures.

- **“Applying of New Coatings in Forming Processes”** (2003-2004), European research, development and collaboration programme “Eureka” project E!2776 - FACTORY INCAF.

The project was carried out together with Lithuanian Energy Institute and company Technologija.

Diamond like carbon, carbide and nitride coatings were grown by direct ion beam, flame spray, plasma spray on flat substrates, which chemical composition and surface structure imitate surface of real parts and instruments. Structure, surface morphology and mechanical stresses of the coatings were estimated and optimized. Hardness of the coatings, resistance to corrosion and thermal influence were investigated.

National projects

- **“High Technologies and Equipment for Human Health Improvement”** (2003-2005), High technologies development programme

The project was carried out together with Kaunas University of Technology and Lithuanian University of Health Sciences.

Computer based equipment was constructed which is able to heat and cool object by thermoelectric modules, software was created. Heating and cooling kinetics of various muscles were experimentally investigated. Heat flows were evaluated by cyclic and long duration heating and cooling. Quantitative differences of various muscle groups' reactions to the heating and cooling processes were determined.

- **“Optimization of Micromounted Capacitive Transducers Structure”** (2003-2005), funded by the Lithuanian State Science and Studies Foundation

The project was carried out together with KTU Institute of Panevėžys.

Development of micromounted capacitive ultrasound transducer structure for ultrasonic debit meters with relation to optimal technical properties and prime cost of manufacturing.

Self-supporting projects

- **“Estimation of Distribution of Static Charge Induced in TV Tube Cylinder by EOS Electrical Field and Decreasing of Its Influence on the Focusing of Electron Beam”**
(2003), research contract with company Ekranas

The project was carried out together with Institute of Materials Science of Kaunas University of Technology.

Experimental equipment for the determination of potential of the electrostatic field and induced charge longitudinal and radial distribution in the TV tube glass neck was produced. Measurement stand was arranged. Areas of localization of surface charge were determined. Method for the formation of antistatic layer on the TV tube glass neck was proposed.