PharmaForum 2009, am 3. November in Frankfurt am Main

1. Company

The Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V. (FhG) is a link between science and industry, that is between the research and the application of its results. It was founded in Munich in 1949 as a non-profit registered association. Today Fraunhofer-Gesellschaft is the leading organisation of institutes of applied research and development in Europe. The employees carry out research and development projects on a contract basis on behalf of industry, the service sector and government. The FhG Institute for Biomedical Engineering (IBMT) in St. Ingbert has its competence in the areas of medical engineering, sensor- and measuring technologies, ultrasound technologies, health telematics, biotechnology and biohybrid technology, environmental control systems, material testing, home systems, air quality control and security systems, as well as industrial process automation and in-line/on-line process control. The expertise of the Neural Prosthetics Group lies on the design, development and test of biomedical microsystems with a special focus on the surface, structural and functional biocompatibility of the microimplants. The Department Medical Engineering & Neuroprosthetics is lead by Prof. Dr. Klaus-Peter Hoffmann. Dr. Siegfried Steltenkamp is currently a member of the Neural Prosthetics Group.

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2. Core Competences

1. **Neuroprosthetics;** Research and Development in the field of implantable Microelectrodes:
    a. Fabrication and design of implantable electrode complexes and structures,
    b. Design and fabrication of implantation tools in the field of neuroprosthetics,
    c. Setup modular implantable systems (e.g. stimulators, multiplexer, etc.) including encapsulation,
    d. Telemetric implant control (data, energy),
    e. Biocompatibility, biostability,
    f. Encapsulation, microstructures,
    g. Modelling and simulation of electrodes-neural-systems.

2. **Neuromonitoring**: Development of Devices and Methods for monitoring of bioelectrical Signals:
    a. Methods for Signal acquisition and stimulation,
    b. Sensors and actuators (e.g. Surface electrodes),
    c. Signal Processing,
    d. Data transmission,
    e. Analysing of signals and systems.

3. Cooperations offered and requested

- Research and development of bioactive implantable electrode systems
- Cooperation for national and international research and development project in cooperation with industry and medical institutions.
- Design, realisation, fabrication, market survey and feasibility study of innovative active implants in the field of neuroprostheses.