

Freiburg researcher awarded ERC grant

Prof. Dr. Jan G. Korvink, Director of the Laboratory for Simulation in the Department of Microsystems Engineering (IMTEK) and Director of the FRIAS School of Soft Matter Research at the University of Freiburg has been awarded an ERC (European Research Council) Advanced Grant for basic research. Together with the research group headed by Prof. Dr. Ralf Baumeister, professor of bioinformatics and molecular genetics at the Institute of Biology III and fellow of the FRIAS School of Life Sciences – LifeNet, Korvink will use the five-year funding to develop a microsystems platform which will open up entirely new possibilities for systems biology research.



Prof. Dr. Jan G. Korvink
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Microsystems engineer Jan Korvink and biologist Ralf Baumeister first met at FRIAS where they developed the idea for this research project – the first major inter-school FRIAS project to be financed with European funds.

The "Modular micro nuclear magnetic resonance in vivo platform for the nematode *Caenorhabditis elegans*" project is focused on the development of an inexpensive, microfluidic high-throughput chip with an integrated nuclear magnetic resonance (NMR) detection unit for the investigation of the nematode *Caenorhabditis elegans*.

The roundworm *Caenorhabditis elegans*, better known as *C. elegans*, is a popular model organism in developmental biology and genetics. Research into *C. elegans* began in the 1960s with the Nobel Laureate Sydney Brenner, who, like Korvink, was born and brought up in South Africa. The nematode has a relatively short development cycle and is therefore easy to grow in bulk

populations. It is only about 1 mm in length and its transparency makes it well suited for analysis with optical systems. As research results obtained with *C. elegans* can easily be transferred to the situation in vertebrate organisms, including humans, the animal has become a popular research object. The unique platform will enable living nematodes to be investigated in nuclear magnetic resonance imagers and will incorporate all steps required for the growth of large nematode populations. The platform will be able to deliver molecular NMR data for individual worms, which will open up a completely new perspective for systems biology research.

Contact:

Prof. Dr. Jan G. Korvink
Laboratory for Simulation
Department of Microsystems Engineering – IMTEK
University of Freiburg
Tel.: +49 (0)761/203-7436
E-mail: korvink(at)imtek.de

Katrin Grötzinger
Communication & Marketing
Department of Microsystems Engineering – IMTEK
University of Freiburg
Tel.: +49 (0)761/203-73242
E-mail: groetzinger(at)imtek.de

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