



## Wirelessly Powered Microelectronic Circuit for Distributed Sensor Networks

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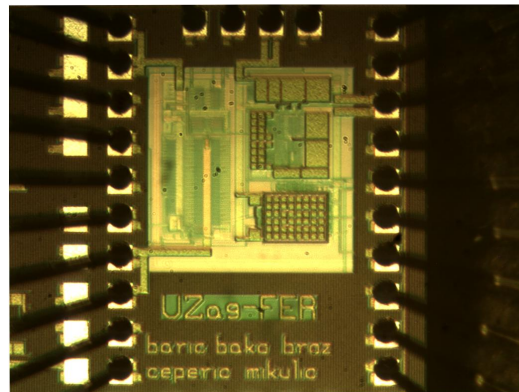
This project aims to develop the key building blocks for the integrated circuits which are the basis for the development of applications for a wirelessly powered distributed sensor networks. For this project circuit development and chip processing are based on a 0.18  $\mu\text{m}$  CMOS technology. Today's sensor nodes in distributed networks use the battery supply, which is problematic due to the limited battery lifetime and its cost.

Integration of wirelessly powered supply with data processing circuits inside single chip is a solution which simplifies the functionality and the maintenance of the sensor networks. In this project chip is processed as a system consisting of the circuits for the wireless supply, the analogue-to-digital converter, the oscillator and the communication channel. Main goal of the project is to gather new knowledge and to develop technologies which can be applied for the commercial purposes.

Main goals of the project are to bring research and development activities and innovation closer to the needs of the Croatian industry, build capacities of the academic institutions and the public science institutions for the technology transfer, better cooperation with the industry and uplift the environment for the research and development and the innovation through infrastructural investments and investments in the necessary research equipment.

Core research activities on the project include the development of the wirelessly powered supply, the development of a 9-bit cyclic analogue to digital converter insensitive to the voltage level changes of the power supply, the development of the oscillator insensitive to the voltage level changes of the power supply, the development of the communication channel, the measurements on the processed chips, the documentation process and the dissemination of the research results.

Expected direct project results involve developed, processed and measured microelectronic circuits for the functionality of the wireless sensor nodes, enhanced research laboratory with new measurement equipment, strengthen expertise in microelectronics and nanoelectronics and published scientific papers, cooperation with the company Locus Ltd with the goal to transfer the knowledge and at least one product or service offered on the market.



The contents of this publication is the sole responsibility of University of Zagreb Faculty of Electrical Engineering and Computing and can in no way be taken to reflect the views of the European Union.

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