

AQUILA

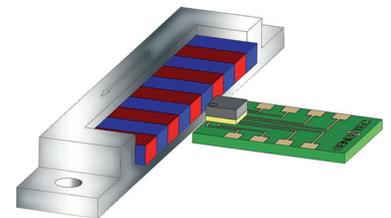
High Resolution Magnetic Field Position Sensors

State of the art positioning sensing is often done by means of magnetic scales and magnetic sensors. During the project AQUILA, this technology will be pushed forward to enter in the high resolution regime.

The goal is a resolution limit well below 100nm. This target will be achieved by developing new magnetic scales and the corresponding magnetoresistive sensors. The scales consist of spatially separated cobalt-based hard magnets fabricated via electrochemical deposition.

Beside the high resolution an energy-self-sufficient system is desired. For that purpose a new application adapted multi-energy harvester is developed. These new components will be tested and evaluated for two different industrial applications.

Tasks of the University of Applied Sciences are the development of the electrochemical and lithographic processes for the fabrication of the hard magnetic materials and the appropriate microscales.



Magnetic microscale (left) with magnetoresistive sensor (right)

Project duration:

01/2015 – 12/2017

Project management:

Prof. Dr. Monika Saumer
Hochschule Kaiserslautern
Amerikastraße 1
66482 Zweibrücken
Germany

phone: +49 (0)631/3724-5420

fax: +49 (0)631/3724-5305

e-mail: monika.saumer@hs-kl.de

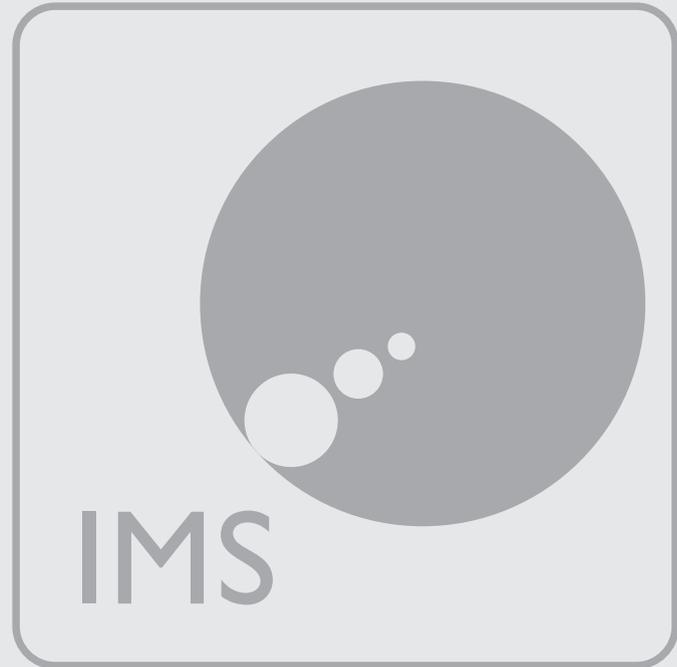
Project partners:

3 industrial partners

3 research partners

Funding:

Federal Ministry of Education and Research



Federal Ministry
of Education
and Research

hs-kl.de/ims