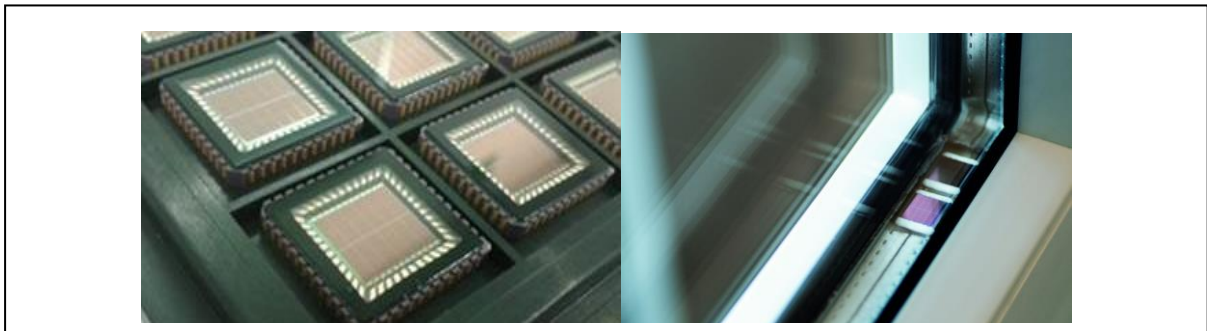


Access provider – Fraunhofer IMS

Energy Harvesting and System Integration - Access description

Photovoltaic Harvesters Design, Processing and System Integration

Access to the environment for design, simulation, test-environment of solar harvesters. Within the micro systems lab Fraunhofer IMS offers a customer specific design and manufacturing of solar cells on top of CMOS circuits (wafer level). Further lab facilities for test and integration.



Technical offering

- Integration of a photovoltaic cell directly on the surface on a silicon chip.
- Support of simulation of solar cells incl. training.
- Performance measurement testbed for photonic microsystems.
- Access to design tools is available for circuit design and layout.
- Consultancy of applying norms and regulations for electronic systems and radio equipment.

Main equipment

- Simulation and design tools
- MST lab
- Electronics lab with measurement equipment
- Circadian light source
- Light spectrum sensor / cabinet
- Rapid prototype PCB-based circuit realization by milling plotter
- Climatic chamber

Typical applications

The well-known principle of photovoltaic power conversion is shifted to a new level in IoT microsystems. Due to the possibility to integrate the solar cell directly on the surface on a silicon chip a novel real single chip systems is enabled. Typical applications can be found in IoT devices for smart homes and outdoor applications as agriculture and logistics.




Case study

A development department is going to evaluate new concepts for tiny IOT devices by the use of solar power but they need access to MST process know how. EnABLES will provide access to the facilities required. A typical project will offer 20 days access to the Fraunhofer IMS researchers and equipment required.

Responsible

Dr. Gerd vom Bögel



		
<p style="text-align: center;">MST lab</p>	<p style="text-align: center;">Light spectrum sensor</p>	<p style="text-align: center;">Milling plotter / LPDF S63</p>
<p>Keys specifications</p>		
<ul style="list-style-type: none"> • 8 in Wafer size • 350 nm structure size • Mostly all available processes for lithography, etching, sputter, galvanic, (atomic) layer deposition 	<ul style="list-style-type: none"> • Adjustable emitter, wavelength 300 to 1500 nm • Measuring setup for characterisation of light sensitive elements 	<ul style="list-style-type: none"> • Fully automatic • High speed milling • High resolution