



Enduser Meeting

Microwave Spintronics as an Alternative Path to Components and Systems for Telecommunications, Storage and Security Applications

December 2016, Paris, France

<http://fp7-mosaic.eu/>

Spin-electronic components are electrical components based on magnetic/non-magnetic multilayer structures. Besides the electron charge, they make use of the electron spin to control the current flow via the magnetic states and thus provide functionalities to the spin-electronic components. Nowadays such components are found in magnetic hard disc drives and magnetic field sensors as well as in magnetic memory (MRAM) and logic elements. The discovery of the spin momentum transfer effect, allowing in turn the control of the magnetization state by the current flow, opened new routes **for applications in the area of integrated microwave components**.

The FP7 project **MOSAIC** (2013-2016) gathered leading scientists in the field of spintronics and microelectronics, supported by industrial partners, to explore alternative routes to microwave components using spintronics concepts for telecommunications, data storage and security applications. The aim is to go beyond stand-alone devices and to embed them into electronic RF circuits in order to demonstrate specific functionalities. Important achievements have been made by demonstrating the **operation of a phase-locked-loop** for signal generation, the operation of wide band **microwave frequency detection** and **novel wireless communications concepts**.

The **aim of the one-day workshop** is to present the results achieved by the MOSAIC consortium to a larger audience of specialists across different disciplines from academia and the private sector. This will open a round table bringing together industrial and research representatives to discuss the short-, mid- and long-term vision of spintronic applications. Expected outputs of this meeting are defining potential routes of further exploitation of these microwave components, establishing future collaborative projects and/or providing guidelines towards research in spintronic based microwave applications.

The workshop will be organized in the first week of December (date to be confirmed) at a central location in Paris.

For additional information on spintronics-based microwave components please visit our webpage <http://fp7-mosaic.eu/> or contact ursula.ebels@cea.fr.