



Editorial



The WAKeMeUP consortium wishes you a Happy New Year!

We are delighted to make you discover our first WAKeMeUP newsletter presenting the latest advances of our European project.

Enjoy your reading!

Dominique Goubier
Project Leader

WAKeMeUP Work Packages Updates

The [WakeMeUP project](#) addresses the foreseen challenges for advanced microcontrollers by developing key enablers technologies. WAKeMeUP intends to provide demonstrators, in small volume, based on Advanced Non-volatile memory technologies for the smart mobility and smart society domains such as high security and general electronics applications.

During the first period, the WAKeMeUP project very quickly took its cruising speed by capitalizing on the technical collaboration network already used and reinforced by the previous project PANACHE.

The first silicon test chips were released and characterized. For the development of the 28nm FDSOI ePCM technology, a special focus was put on the memory cell characterisation and electrical test, given some statistical distribution and first assessment of the memory cell performances. The validation work was first targeting the automotive mission profile in term of reliability (Temperature and Cycling). The first demonstrator called 'CENTAURI' was successfully processed, tested and characterized ; samples were delivered to the end customer for further qualification purpose at application level.

Furthermore, a development plan for a more aggressive PCM cell size (shrunked cell) was defined and started. In parallel to the process development, several work and studies were conducted to enhance the PCM with the help of academics and research institutes and also work has been started on the equipment side. Concerning the FeRAM path, the German partners already defined the development plan and started material and architecture studies on the first samples

WAKeMeUP Was at EFCS 2019



The third edition of the European Forum for Electronic Components and Systems (EF ECS) took place in Helsinki (Finland) from 19 to 21st November 2019.

This international event with a focus on 'Our Digital Future', brings together major actors in the ECS industry and community.

The European partners of the WAKeMeUp project held a booth at EF ECS where they presented their last results. They participated also in a co-located workshop, on 19th November morning, focused on ECSEL pilot lines success stories. This event sponsored by STMicroelectronics and co-organised with CEA-LETI, TU Darmstadt, SOITEC, GLOBALFOUNDRIES, LYNRED, BOSCH and ECSEL JU, highlighted the positive impact of recent supported projects such as WAKeMeUP. On this occasion, a trifold leaflet presenting the WAKeMeUP project was distributed and a poster was displayed!

For more information on the workshop: <https://bit.ly/2P3M0WC>

WAKeMeUP Last Publications

From IPMS-Fraunhofer

Local crystallographic phase detection and texture mapping in ferroelectric Zr doped HfO₂ films by transmission-EBSD

Appl. Phys. Lett. 115, 222902 (2019)
<https://doi.org/10.1063/1.5129318>

From TU DARMSTADT

Forming-Free Grain Boundary Engineered Hafnium Oxide Resistive Random Access Memory Devices

Advanced Electronic Materials, 5, 1900484 (2019)
<https://doi.org/10.1002/aelm.201900484>

From CEA Leti

Impact of roughness of TiN bottom electrode on the forming voltage of HfO₂ based resistive memories

Microelectronic Engineering Volume 221, 111194, 15 January (2020)
<https://doi.org/10.1016/j.mee.2019.111194>

From UAB

Self-Organizing Neural Networks Based on OxRAM Devices under a Fully Unsupervised Training Scheme

Journal of Applied Physics 125, 234503 (2019)
<https://doi.org/10.3390/ma12213482>

Come Meet us at These Next Events!

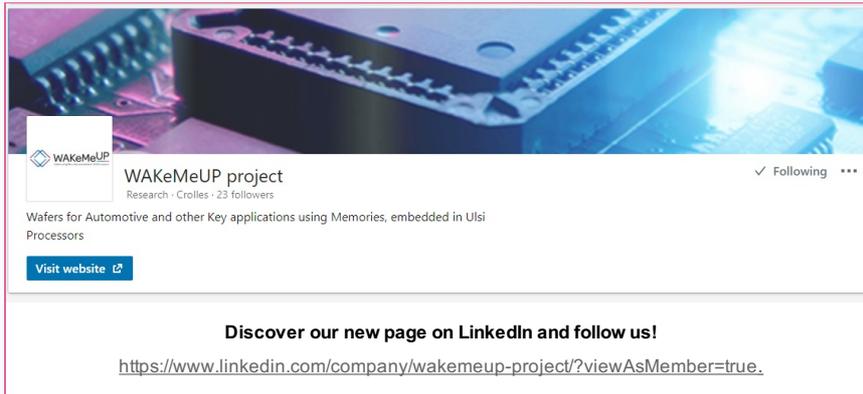
11th Annual Non-Volatile Memories Workshop

San Diego, USA,
 08-10/03/20
<http://nvmw.ucsd.edu/>

15th International Conference on Modern Materials and Technologies, CIMTEC

Montecatini terme, Italy
 15-23/06/20
<http://2020.cimtec-congress.org/general->

**SAVE THE DATE: Next 24M General Assembly on 17 & 18 June 2020
in La Ciotat (Thales), France**



WAKeMeUP project
Research · Crolles · 23 followers

Wafers for Automotive and other Key applications using Memories, embedded in Ulsi Processors

[Visit website](#)

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<https://www.linkedin.com/company/wakemeup-project/?viewAsMember=true>



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