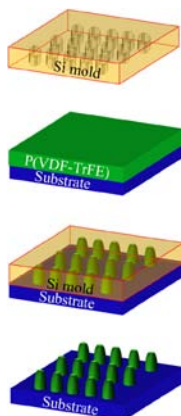




## NANO-PATTERNED POLYMER THIN FILM FOR ULTRA-LOW VOLTAGE NON-VOLATILE FERROELECTRIC MEMORY DEVICES

Sopartec, the technology transfer company of the Université catholique de Louvain (UCL), presents a unique patented technology to pattern a ferroelectric polymer storage medium while simultaneously decreasing its writing voltage to a few Volts only.



### Technology Keywords

- Non-volatile Ferroelectric memory
- Ultra-low operation voltage
- Nano-embossing techniques

### Technology Market : Next-Generation Memory Devices

The next generation of portable computing, communication and storage devices are tremendously demanding on memories that combine the best characteristics of today's three leading technologies. Ferroelectric memory devices exhibit the endurance of DRAM, the fast write and read speed of SRAM, and the non-volatile capability of Flash memory. In this context, plastic ferroelectric storage layers are appealing due to easy processing. However, patterning and low voltage operation

were until now key technical obstacles for plastic ferroelectric memory devices.

The processing technology developed by UCL meets the market demand for rapid and inexpensive fabrication of high-density and ultra-low operation voltage storage layer used for high performance ferroelectric memories.

### The UCL invention

UCL processing methodology is protected by a pending patent, which discloses a rapid and inexpensive hot nano-embossing method able to simultaneously shape a ferroelectric polymer film into numerous nano-sized cells, while decreasing the writing voltage by controlling the orientation of the chains in each nano-cell. Arrays of storage cells can be produced with a **density larger than 33 Gbit/inch<sup>2</sup>** and a **writing voltage of 2-5V only**. The entire process takes just a **couple of minutes**, is easily **scalable**, and basically only requires a hot melt press.

### Technology Status

This work is the subject of a patent application :

- PCT/EP2009/056656 (Priority date : 2008-05-30)

It was published in the high-impact factor journal Nature Materials :

- Z. Hu, M. Tian, B. Nysten, A. M. Jonas, Regular arrays of highly ordered ferroelectric polymer nanostructures for nonvolatile low voltage memories, Nature Materials 2009, 8, 62-67.

Sopartec would like to talk to companies interested in developing and commercializing this opportunity.

#### Contact

Frédéric Ooms, Ph.D.

Senior Patent & Licensing Manager

Tel +32-(0)10-390 021

Email [f.ooms@sopartec.com](mailto:f.ooms@sopartec.com)

Web [www.sopartec.com](http://www.sopartec.com)

<http://www.uclouvain.be>