



Laboratoire PPSM – UMR CNRS 8531

Photochimie et Photophysique Supramoléculaires et Macromoléculaires

Séminaire PPSM

Vendredi 24 Mai 2013- 11h00

Salle Condorcet, Bâtiment d'Alembert

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Invité par : Robert Pansu

«Flexible floating gate flash memory»

Flash memories have attracted considerable attention as promising next-generation nonvolatile memories owing to their higher chip density, multi-bit per cell storage property and compatibility with the current complementary metal–oxide–semiconductor (CMOS) process. Flash memories have been fabricated through microcontact printing methods. Fabrication through solution process enables large-scale roll-to-roll printing of memories, leading to innovative applications in modern electronics [1]. Among various device configurations of flash memories, floating gate architecture is considered as a promising candidate to realize the ultimate goal of flash memory due to its non-destructive read-out and compatibility with complementary CMOS devices. Floating gate transistor memories embedded with hybrid nanostructures at the gate dielectrics is a way to replace planar floating gate for meeting the requirement of long retention time with high density data storage for the next generation flash memories [2]. However, poor charge retention time induced by the thin tunneling dielectric layer is a drawback for the floating gate memory device. By simply increasing the thickness of tunneling dielectric layer would degrade the program/erase speed and increase the power consumption. On this regard, we present a self-assembly approach for constructing monolayers of nanostructures to achieve better charge retention properties.

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