

## Controlling Magnetism by Interface Engineering

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### **Résumé:**

The exploration of interface effects in magnetic nanostructures has demonstrated many times over to be of capital importance for the development of spintronics applications and continues to be a key aspect in the design of novel technologies. The research work presented here spans over a variety of magnetic materials, device geometries and physical effects keeping none the less a common denominator, the control of magnetism by interface engineering. This thesis presents work done to control magnetism in nanostructures by (I) charge accumulation/ionic migration induced by electric fields, (II) surface functionalization, (II) He<sup>+</sup> ion irradiation and (III) the effects of confinement through patterning focusing mostly on the effects produced on magnetic anisotropy and magnetic domain wall dynamics.