# Emerging materials for energy efficient neuromorphic computing

Von Neumann architecture is ubiquitous in nowadays computers. For neuromorphic data processing applications, Von Neumann architecture result in large computing times and, concomitantly, great power consumption. Thus, new architectures are envisaged. Currently, there is vast family of materials, which are good potential candidates to form the building blocks for the future neuromorphic computing architectures. From this vast family of materials, ferroelectric oxides might present several advantages, mainly in terms of power consumption and reliability. However, the knowledge on good ferroelectric oxide materials integrable in industrial processes is limited.

The project aims on the study of new industrially compatible ferroelectric oxides using an important palette of different techniques, ranging from those aimed to characterize the materials at the nanoscale to those used to characterize prototype memory devices.
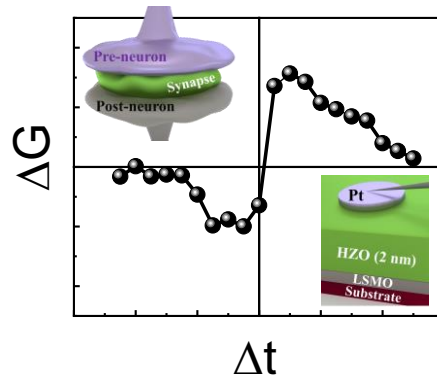
Supervisor: Ignasi Fina
Contact: ifina@icmab.es
Place: Institut de Ciència de Materials de Barcelona