

**PROJECT / COST IC1401 Memristors -
Devices, Models, Circuits, Systems and
Applications (MemoCiS)**

MemoCiS

Main Objective:

The invention of the “transfer resistor”, or “transistor” as it is known today, is considered to be the greatest invention of the 20th century, as it forms the basis of all electronic systems. The next technological revolution will come through self-organizing and self-programming circuits and systems, which are similar to biological brains in that they can learn to perform tasks.

The recently rediscovered Memristor offers a computational substrate with plasticity, in which adaptive circuits can be efficiently implemented. This Action is aimed at bringing together researchers of different backgrounds to work in unison so as to overcome multidisciplinary barriers in the area of memristors. Bringing together device designers, device modelers, circuit theorists, analogue and digital designers, neuromorphic engineers and computation scientists will enable the defragmentation of current research efforts and is likely to bring the next technological revolution. The creation of the hardware basis for future self-organizing/self-programming systems will really open up a wide range of application areas and new industries, e.g. humanoid robots to look after the elderly, self-driven vehicles etc.

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Team: [Luis Filipe Mesquita Nero Moreira Alves](#)

Groups: [Integrated Circuits – Av](#)

Local Coordinator: [Luis Filipe Mesquita Nero Moreira Alves](#)
