

Graphene-coated textiles: a platform for wearable electronics



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Helena Alves obtained her PhD in 2004, from Lisbon Technical University, Portugal, on organic semiconductors, metals and superconductors. After two years as a post-doc at the same University, she moved to Delft University of Technology, in the Netherlands, for two years as a guest researcher, always working in photonic applications. She returned to Portugal, to INESC-MN, as senior researcher, and in 2015, she moved to CICECO, University of Aveiro, as principal researcher. Main interests arise in materials with optoelectronic properties, nanotechnology and advanced applications (flexible, transparent and wearable).

We review current trends of wearable electronics and the potential of graphene-related materials within this topic. We discuss the use of graphene as material to be used as transparent electrode with examples. We then give an overview of doping graphene by surface charge transfer and show it can be used to modulate graphene's electronic properties and as a chemical sensor. We show that tunable electronic properties also have an impact on graphene biological interactions.