2D and 1D materials for the next generation of sensors, Energy storage, Harvesting, information storage and EMS devices.

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This contribution deals with the applications of 2D and 1D nanomaterials for different applications. At Thales, we developed in 2006 a new deposition technique for the fabrication of gas sensors based on carbon nanotubes field effect transistors (CNTFETs) [1]. Thales was/is a pioneer in the development of the spray-gun deposition technique and owns several patent. In 2009 Thales was the first company working on this technique for the fabrication of supercapacitors based on mixing of graphene and CNTs. The first paper dealing with dynamic spray-gun deposition for energy storage was published in 2013[2]. These results allowed Thales to join the Graphene Flagship project where Thales has worked on the upscaling of the technology. However, thanks to the versatility of this deposition technique new applications have been tackled such as information storage and Electromagnetic shielding exploiting multi-layered structures [3]. Thales is also involved in the study of 2D topological insulators, such as stanene, for the new generation of Thermoelectric generators with enhanced ZT. During the presentation, results issued in the framework of several EU projects will be shown and discussed

References

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