

Nanomaterials: applications, uses-cases and scalability in production and implementation

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Thales Research and Technology (TRT) is the research center of the Thales group and its technology provider.

In TRT, we work on the potential application of nanomaterials for a large panel of applications. We have to identify the main scientific breakthroughs that can be translated in major innovations for the group. The scalability of the fabrication of new devices and of the production of nanomaterials to be implemented are extremely important issues considering the final impact on the final cost of the devices to be fabricated and on its miniaturization. For this reason, for example in case of supercapacitors based on Graphene electrodes we have tried to marry a roll-to-roll fabrication method using spray for nanomaterials deposition with the utilisation of inks that can be produced in a scalable way working with partners in the field. In case of 2D materials for Thermoelectric, the development of new materials with very high efficiency can allow the strong reduction of materials employed in the devices and allow to achieve an economic and ecological benefit. This will allow to make easier the scalability and their implementation in a large panel of applications such as wireless sensors node (WSN) and IoTs (where miniaturization is mandatory). During the presentation different use-cases will be presented and the motivation for the research in the field, taking into account economic impact.