

Multisectorial applications of graphene

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Tecnalia approaches the identification and development of potential innovative graphene applications from a societal point of view, by identifying current needs in a wide-range of fields, such as energy, health, industry, construction, etc. Our sound technological knowledge enables us to identify problems and applications for this new nanomaterial, which can greatly benefit society. Once identified, thanks to our state-of-the-art laboratories, we are able to develop prototypes (both at lab and pilot scale) with an aim to solve the identified problems. Finally, a feasible solution is designed and transferred to industry.

TECNALIA has several on-going developments of graphene-derived products, such as:

- Electrodes for batteries & supercapacitors for energy storage
- High thermal dissipation composites (e.g. for aerospace and electronics applications)
- Thermal interface materials (e.g. for electronics applications)
- Light-weight composites (e.g. for transport applications)
- Electrodes for water desalination
- Conductive inks for printed electronics
- Conductive coatings as novel electrodes
- Membranes for separation processes (e.g. for chemical industry applications)

The following two examples will be presented in detail: (1) Electrodes for batteries¹ and (2) high thermal dissipation composites for aerospace applications².

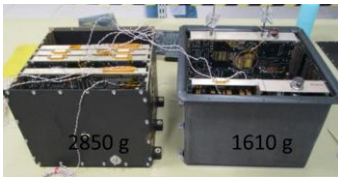
References

- [1] M. Insausti, B. Iraola, I. Bustero, F. Fernández-Carretero, D. A. Pacheco Tanaka, A. García-Luis Composite graphene/MnO₂ as catalyst for air electrodes in metal-air batteries. Graphene 2015, 10-13 March 2015, Bilbao (Spain).
- [2] I. Bustero, B. Pérez, B. Iraola, M. Chapartegui, S. Flórez, I Gaztelumendi, M. Jurado, M. Mendizábal, R. Seddon, I. Obieta. Graphene-based composites for thermal management applications. Nanospain Conference 15-18 March 2016 Logroño (Spain) Oral Communication.

Figures



Cathodes for Li-S batteries



43% weight reduction

Light-weight composites for aerospace applications