

Graphene, an incredible innovation opportunity for a fast transformation of the energy industry.

Louis GORINTIN , Laurent BARATON, Frederique Lebovits

CRIGEN Nanotech Energy – Research & Technology Division - ENGIE.
361, av. Pdt Wilson – BP 33 – 93211 Saint Denis La Plaine Cedex – France
louis.gorintin@engie.com

Abstract

As a major energy player ENGIE develops its businesses (power, natural energy and energy services) around a model based on responsible growth to take up today's major energy and environmental challenges: meeting energy needs, ensuring the security of supply, fighting against climate change and maximizing the use of resources.

Innovation is a key assets to achieve this development and as one of the most active domain of research and development, nanotechnologies are a useful part of the toolset at hand. Quick development of graphene activities in the world of energy is real milestone for this conservative industry. In that perspective, this talk will try to give an overview of the potential application of graphene that may quickly find usefulness in the energy industry.

At first, we will look at the development of graphene based devices for energy storage, energy transformation, new sensing device through the use of new material based on grapheme or graphene composite for new properties material (catalyst properties, electrochemical advantages, electrical conductivity, thermal transfert)[1].

Then we will try to fill the gap between between existing businesses for example for the gas industry and use of carbon material to produce new by product as grapheme and other high value products.

Finally, we'll expose through which processes and framework an international industrial group such as ENGIE can become an early adopter of emerging technologies developing specific partnership.

References

[1] A. C. Ferrari, "Science and technology roadmap for graphene, related two-dimensional crystals, and hybrid systems," Nanoscale, Sep. 2014

Figures