

# Smart solutions for the incorporation of graphene and other 2D-crystals in industrial products

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[2] A.E. Del Rio Castillo et al., *Material Horizons* 5 (2018) 890.

## Abstract

BeDimensional S.p.A. is the start-up company of the Italian Institute of Technology (IIT) which deals with the research and production of high-quality 2D crystals and their integration in industrial products for several application fields. Among them, the field of smart wearables is one of the most promising. Wearables in fact can benefit from the peculiar properties of graphene, boron nitride and other inorganic 2D crystals to enhance their electrical, thermal and mechanical properties. We will present our capabilities for the production, with patented technology, [1] of high-quality 2D-crystals [2] and their integration in composites. We will highlight some functional prototypes in the field of shoes and clothing.

Solutions concerning the functional compounding of graphene and other 2D crystals with polymers, elastomers and other common materials of interest for the assembly of smart apparel will also be presented. These prototype examples pave the way for the commercialization of 2D crystals-based products.

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## References

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[1] Antonio Esau Del Rio Castillo, Alberto Ansaldo, Vittorio Pellegrini, Francesco