

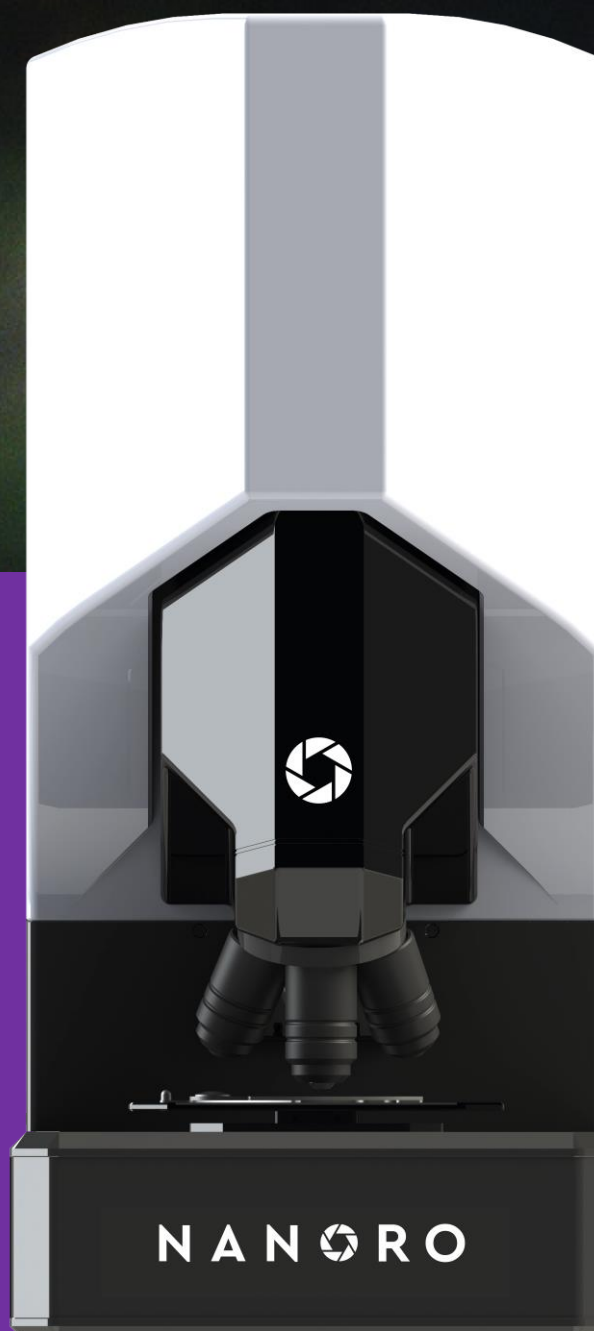
# Application Note for microsphere imaging. Graphene Suspensions

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# Graphene Imaging

## What?

Since the Nobel prize was awarded for its discovery in 2010, the use of graphene within the scientific community has been extensive and wide-ranging. At just a single atom thick, graphene is the strongest, and thinnest material known to man.

The images to the right show polypropylene pellets impregnated with graphene flakes to approximately one percent (by volume).

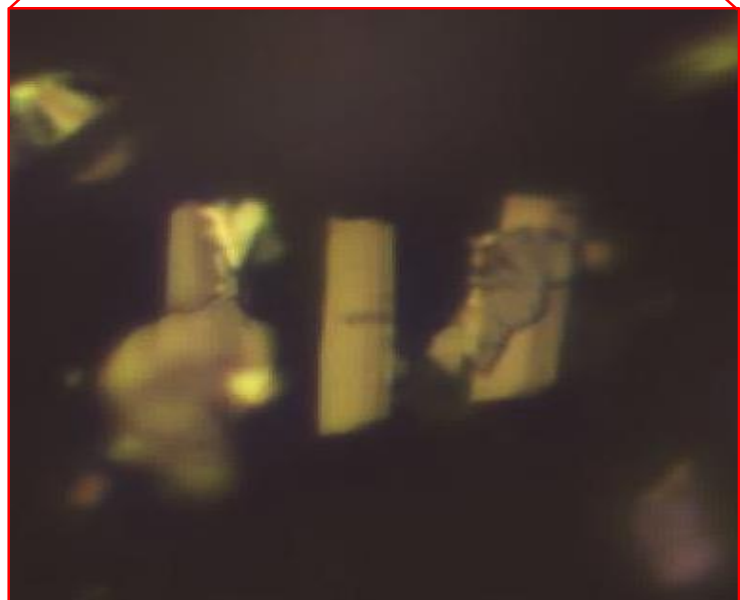
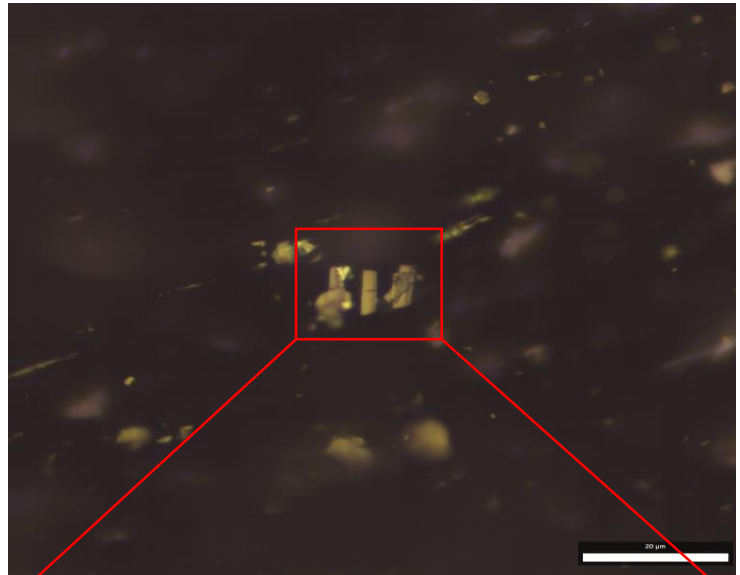
## Why?

Due to its inherent strength, small quantities of graphene can be used to reinforce materials, opening-up new markets and applications. The size of the graphene flakes can be extremely small and the size and distribution is thought critical to the end result. The optics in SMAL and Nanoro are interesting new tools to learn about and characterise these new materials.

## Results

Nanoro bright field microscopy was used on CVD graphene impregnated polypropylene pellets (extruded) provided by the Graphene Engineering Innovation Centre (GEIC), Manchester, United Kingdom. The size, orientation, distribution and alignment of the graphene flakes is of interest in understanding the science behind the material benefits. Understanding these aspects is expected to lead to material enhancements in the future.

Combining high resolution and wide-area stitching allowed a detailed visualization of the graphene flakes within the material.



**“LIG Nanowise’s microscopes are giving us a deeper insight into a range of graphene materials and products. We are excited to further explore the possibilities of their technology”**

Dr Paul Wiper.  
Graphene Engineering  
Innovation Centre,  
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