The importance of pre-normalisation research: *VAMAS and graphene related 2D materials*

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TOPIC / ABSTRACT

For any new material, ensuring that the whole community can reliably and reproducibly compare the material properties of that material is crucial to allow innovation and ensure confidence in the supply chain. **Graphene** and **other 2D materials** are particularly affected by this, as there are many commercial suppliers selling a product as 'graphene' whereas the product may well be nanographite when applying terminology in a strict sense. Similarly, although **graphene is already being used in real-world products** and has been touted as disruptive in many industry areas, ranging from **batteries** to **biomedical devices**, one type of material may be more suited to one application whilst another is better suited to another application, depending on the material properties. This **make the standardisation of the measurement of the properties of these 2D materials extremely important** for companies that are producers, through to product developers.

To this end, **pre-normalisation research is key** to ensuring the most accurate and measurement international standards, in bodies such as **ISO** and **IEC**. The work undertaken within **VAMAS** to ensure that **measurement protocols are compared, assessed and improved to be used in these standards** will be discussed. The different projects that have been undertaken will be highlighted, as will projects that are looking for further engagement from academia and industry. The **different measurement techniques that have been standardised** in this area will be disseminated and an example of a specific VAMAS international **interlaboratory study** will be detailed.

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