

# TECHNICAL SPECIFICATION

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**Nanomanufacturing - Reliability and durability assessment -  
Part 3-2: Graphene - Ellipsometry measurement of graphene**

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Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this Technical Specification is English.

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## INTRODUCTION

Graphene, a single layer of carbon atoms with each atom bound to three neighbours in a honeycomb structure, is an important building block of many carbon nano-objects, and possesses the excellent characteristics for various nanoelectronics devices, such as the high conductivity in the 2-dimensional structure. Graphene is also a promising candidate for atomically thin, flexible and transparent optoelectronic devices, various sensors, and the capping material on the electronic transport in ultra-scaled interconnects. Ellipsometry is a non-destructive optical tool to evaluate the dielectric properties, namely the complex index of refractive, of thin-film-shaped materials. Ellipsometry has the advantage of being able to evaluate a relatively large area of the film. Ellipsometry can be used to characterize thickness, roughness, composition, crystalline nature, and other properties of graphene.

This document offers the test method of ellipsometry to evaluate the reliability and the durability of graphene layers on a substrate.

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