

## INTISARI

### **KAJIAN PENENTUAN KETEBALAN LAPISAN *GRAPHENE OXIDE (GO)* DI ATAS *STAINLESS STEEL (SS)* MENGGUNAKAN SPEKTROSKOPI ELIPSOMETRI**

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Kajian penentuan ketebalan lapisan *Graphene Oxide (GO)* di atas substrat *Stainless Steel (SS) foil* menggunakan spektroskopi elipsometri telah dilakukan. Spektroskopi yang digunakan yaitu *Rotating Analyzer Ellipsometry (RAE)*. Deposisi larutan GO di atas SS menggunakan metode *drop casting*. Sampel divariasikan ketebalan lapisan GO sampai 3 variasi *drop*. Sampel selanjutnya diuji menggunakan spektroskopi elipsometri. Hasil data elipsometri berupa nilai  $(\psi, \Delta)$  selanjutnya diolah menggunakan software Reffit dengan permodelan fisis udara/SS foil dan udara/GO/SS dan diselesaikan menggunakan model Drude-Lorentz. Hasil ketebalan GO untuk sampel *drop* pertama, kedua, ketiga berturut-turut yaitu 9,86 nm, 17,64 nm, dan 29,47 nm. Ketebalan lapisan *graphene* meningkatkan sifat mekanik material substrat sampai batas ketebalan tertentu.

Kata kunci : *Graphene, Graphene Oxide (GO), Stainess Steel, Elipsometri, Drop Casting*

**ABSTRACT**

***STUDY OF DETERMINATION LAYER THICKNESS OF GRAPHENE  
OXIDE (GO) ON STAINLESS STEEL (SS) USING ELLIPSOmetry  
SPECTROSCOPY***

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*The study of determination layer thickness of the Graphene Oxide (GO) on the Stainless Steel (SS) foil substrate using ellipsometric spectroscopy has been carried out. The spectroscopy used was the Rotating Ellipsometry Analyzer (RAE). The deposition of GO ranks over SS uses the drop casting method. The samples were varied in thickness of the GO layer to 3 variations of the drop. The samples were then tested using ellipsometric spectroscopy. The results of the ellipsometric data in the form of values ( $\psi, \Delta$ ) were then processed using Reffit software with air/SS foil and air/GO/SS physical modeling and completed using the Drude-Lorentz model. The GO thickness results for the first, second, and third drop samples were 9.86 nm, 17.64 nm, and 29.47 nm, respectively. The thickness of the graphene layer increases the mechanical properties of the substrate material to a certain extent.*

*Keywords : Graphene, Graphene Oxide, Stainless Steel, Ellipsometry, Drop Casting*