平成 30 年度第 5 回 VBL セミナー

5thVBL Seminar 2018

日時：平成 30 年 11 月 27 日（火）15 時 00 分～16 時 30 分

場所：工学部 1 号館 144 講義室

講師：Rodolfo Morales Ibarra 特任准教授
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（メキシコ））

題目：Graphene Exfoliation from Graphite by Supercritical Water and other Supercritical Fluids

要旨：
Graphene is an unconventional material with a two-dimensional hexagonal crystalline array of elemental carbon atoms and outstanding properties; accordingly, a desirable objective in the line of research of graphene is the development of novel and more productive methods of synthesis, validating its properties and applications. In our exploratory research we have effectively exfoliated graphene from graphite using supercritical fluids (water, ethanol and carbon dioxide). The exfoliated graphene was properly characterized; via scanning electron microscopy the morphology of graphene was observed; transmission electron microscopy analysis exhibited the crystalline structure of graphene attesting also the expected transparency of exfoliated layers; the Raman spectra confirmed the exfoliation of graphene depicting the characteristic shift towards smaller Raman number in the 2D band (2676 cm^{-1}) compared to that of graphite. Graphene exfoliation from graphite by supercritical fluids promises to be a simple and large-scale method for graphene production.

Keywords: Graphene; Exfoliation; Supercritical Water; Supercritical Fluids

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