The adsorption of (2E, 5E)-2,5 Bis [(4-dimethylamino) benzylidene] cyclopentanone onto graphene oxide, a combined experimental and theoretical study

Presenting Author: Rilinda Plakaj
Ardhmeri Alija, Admir Omaj, Veprim Thaçi, Makfire Sadiku, Fetah Podvorica, Avni Berisha
University of Prishtina, 10000, Prishtine, Kosove
Contact: rilindaplakaj1@gmail.com

Abstract
Graphene oxide (GO) represents a nanomaterial of immense interest for the adsorption of different chemical species ranging from small ions to relatively huge molecules such as peptides and even proteins. For the adsorption from solutions GO is material of choice as it possess huge surface. For the evaluation of its adsorption properties (both experimentally and theoretically) ''(2E, 5E)-2,5 Bis [(4-dimethylamino) benzylidene] cyclopentanone'' is selected in this study. The experimental results based on the UV-Vis spectrophotometry technique are quite satisfactory and promising. Both adsorbent (GO) and adsorbat (pre-synthesized) are characterized by some powerful spectroscopic techniques.The data generated through theoretical techniques are consistent with the experimental results!

References

[1] V. Thaçi, A. Berisha, R. Hoti, Experimental and Theoretical Study of Some 2,5-Diarylidenecyclopentanone Derivatives. Joint Science Congress of Materials and Polymers - ISCMP 2019. Open Chemistry

[2] A. Alija, D. Gashi, R. Plakaj, A. Omaj, V. Thaçi, A. Reka, S. Avdiaj, A. Berisha . A theoretical and experimental study of the adsorptive removal of hexavalent chromium ions using graphene oxide as an adsorbent. Open Chemistry. https://doi.org/10.1515/chem-2020-0148

[3] Dideikin AT, Vul' AY. Graphene oxide and derivatives: the place in graphene family. Front Phys. 2019;6:149.

[4] Veprim Thaçi, Ramiz Hoti, Avni Berisha*, Jane Bogdanov*, Corrosion study of copper in aqueous sulfuric acid solution in the presence of (2E,5E)-2,5-dibenzylidenecyclopentanone and (2E,5E)-bis[(4-dimethylamino)benzylidene]cyclopentanone: Experimental and theoretical study , Open Chemistry 2020; 18: 1412–1420.

Figures

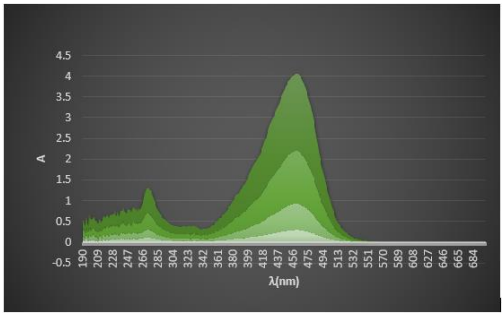

Figure 1: UV-VIS spectrum of (2E, 5E) -2,5 Bis [(4-dimethylamino) benzylidene] cyclopentanone in acetonitrile solution