# ADSORPTION OF SMALL ORGANIC MOLECULES ON GRAPHITE, GRAPHENE AND ITS DERIVATIVES

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**Abstract**

We present a combined experimental and theoretical study aimed at understanding the behavior of small organic molecules (acetone, acetonitrile, dichloromethane, ethanol, ethyl acetate, hexane, and toluene) on the surface of graphite, graphene and its halogenated derivatives. We measured isosteric adsorption enthalpies and entropies by inverse gas chromatography for large interval of coverages. The strength of interaction between the surface and the organic molecules was estimated by various theoretical methods using both finite and periodic graphene models.[1] We also discussed in detail the role of high-energy sites in graphene and graphite.[2] In addition, interplay between ethanol adsorption to high-energy sites and ethanol clustering on graphene and graphite alters the measured isosteric adsorption enthalpies.[3] Finally, the graphene surface was compared to surfaces of halogenated graphenes. [4]

**REFERENCES:**

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[4] Lazar, P, Otyepková E, Karlický F et al. Carbon, 94, 804-809, 2015Keywords: A-III/B-nitrides, scintillators, photo- and radio-luminescence, MOVPE

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