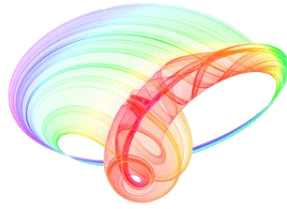


Book of abstracts



PHOTONICA2017

The Sixth International School and Conference on Photonics

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&H2020-MSCA-RISE-2015 CARDIALLY workshop



28 August – 1 September 2017

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Editors

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Institute of Physics Belgrade, Serbia

Belgrade, 2017

ABSTRACTS OF TUTORIAL, KEYNOTE, INVITED LECTURES,
PROGRESS REPORTS AND CONTRIBUTED PAPERS

of

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Technical assistance

Marko Nikolić and Danica Pavlović

Publisher

Institute of Physics Belgrade
Pregrevica 118
11080 Belgrade, Serbia

Printed by

Serbian Academy of Sciences and Arts

Number of copies

300

ISBN 978-86-82441-46-5

Planar versus three-dimensional growth of metal nanostructures at 2D heterostructures

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Graphene (G) and other recently synthesized two-dimensional (2D) crystals show diverse structural and electronic properties. A novel class of materials with unique features can be manufactured by assembling individual layers of these 2D materials. For example G/MoS₂ heterostructures combine excellent conductivity and transparency of G with high optical activity in visible light of MoS₂. Understanding interaction of 2D materials and their heterostructures with metals is of critical importance for their technological applications.

Employing density functional theory we studied microscopic mechanisms governing initial stages of growth of three selected metals (Li, Ti and Ca) on G. Tendency towards planar or 3D growth is rationalized based on description of the interaction between metal adatoms, as well as adsorption geometries of their trimers and tetramers.

In addition to this we investigated G/MoS₂ intercalation with Au and found strong tendency of gold intercalants to form planar structures.

REFERENCES

- [1] S. Stavrić, M. Belić and Ž. Šljivančanin, Carbon 96, 216 (2016).
- [2] Ž. Šljivančanin and M. Belić, submitted to Phys. Rev. Mater.