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Special Section Guest Editorial: Nanocarbon Photonics and Optoelectronics

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This special section of the *Journal of Nanophotonics* is focused on nanocarbon photonics and optoelectronics. The section is based on the research works presented at the 4th International Workshop on Nanocarbon Photonics and Optoelectronics, which was held in Huhmari, Finland. This is the fourth time the papers in this field have been collected in a special section.

The workshop on Nanocarbon Photonics and Optoelectronics is becoming more and more popular owing to its high scientific level, creative and friendly atmosphere as well as unique possibilities for communications among people working in different research fields. The community attending the workshop consists of leading scientists who provide comprehensive reviews of the state-of-the-art in nanocarbon materials and applications, and 80 to 100 young researchers who present contributed papers with recent results. The next workshop will be held in Finland in August 2016. It is always perfectly organized by the University of Eastern Finland in Joensuu. The workshop is chaired by Professors Yury Svirko and Alexander Obraztsov. The Finnish Academy of Sciences and the Russian Foundation for Basic Research support the workshop.

Interest in carbon and especially in nanocarbon (carbon nanotubes, graphene, nanodiamond [Bokova-Sirosh et al.]) and similar materials (MoS2, Si-N clusters [Lalayan, Israelyan, and Movsesyan]) is growing with time. The present special section demonstrates the achievements not only in synthesis and studies of fundamental properties of nanocarbon, but also in different applications of this material: in photonics (Mikheev et al., Vella et al., and Noury et al.), field emission (Kleshch et al. and Gorodetskiy et al.), composites (Plyushch et al.), sensors (Sysoev et al. and Kondrashov et al.), waveguide-resonance gratings (Kumar et al.), supramolecular organization (Alvarez et al.), solar energy conversion (Lobiak et al.), probes for atomic force microscopy (Tuyakova, Obraztsova, and Ismagilov). Different synthesis and modification techniques are used for formation of nanocarbon materials with novel properties: liquid phase exfoliation (Pavlova et al.), carbon precipitation in metals (Shvets and Obraztsov), gyrotron discharge (Batanov et al.), plasma enhanced direct current chemical vapor deposition (Ismagilov et al.), filling nanotubes with CuCl (Eremina, Fedotov, and Obraztsova, and Eremin, Tonkikh, and Kudryashova), doping graphene with nitrogen (Sedelnikova, Bulusheva, and Okortub, and Pereyaslavtsev et al.). New nanostructures based on carbon nanotubes are reported: double-wall carbon nanotubes (Levshov et al.), one-dimensional carbon chains (Arutyunyan, Fedotov, and Kononenko), graphene nanoribbons formed inside nanotubes from coronene molecules (Chernov et al.).

We hope that the readers of the *Journal of Nanophotonics* will enjoy this special section. It should bring new ideas to a wide audience of scientists, researchers, and students working with carbon and relative nanomaterials.

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