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Introduction

The Second International Conference on Advanced Optoelectronics and Lasers, CAOL 2005, was held 12 to 17 September 2005, in Yalta, Ukraine, in the resort "Russia," which is in the immediate vicinity of Livadia Palace and situated in the luxurious park, Chukurlar. The conference covered many aspects of advanced optoelectronics, including application of theoretical methods and computer modeling of optoelectronic and laser systems, as well as tangent areas of optoelectronics research that are currently underway. We can say with great satisfaction that CAOL is receiving international recognition as one Ukraine's first-rate English-speaking conferences on optoelectronics and laser engineering. It should be noted that this conference is unique in that it joins specialists in precision signal processing with optical engineers.

Participants from leading scientific organizations in 37 countries gathered in Yalta to present papers embracing mathematical, physical, and technical problems of modern laser physics, photonics, optics, and signal processing. The research topics with high representation were semiconductor nanoengineering and photonic crystals, and nonlinear optics, as well as optical measurements, wave distribution in optical systems, and precision oscillations.

It can be concluded that CAOL 2005 was met with success, and indeed the CAOL series continues. The Conference was held in Guanajuato, Mexico (2006) and is planned to be held again in Alushta, Ukraine in September, 2008. It holds great potential for showcasing ongoing investigations in those fields of photonics that will generate new optoelectronic devices for various applications. In particular, this potential lies in research related to photonic crystals and devices based on them, creation of new nanolasers and other active elements based on quantum-confined structures, and creation of ultrabroadband systems and data transmission devices, including those for application in optical computers.

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