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*In commemoration of 85th birthday
of Professor Galyna Puchkovska*

SPECTROSCOPY OF MOLECULES AND CRYSTALS

Book of Abstracts
of XXIV Galyna Puchkovska International School-
Seminar

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The Book contains abstracts of reports presented at XXIVth Galyna Puchkovska International School-Seminar “Spectroscopy of Molecules and Crystals” (25-30 August, 2019, Odesa, Ukraine). The abstracts cover recent advances in theoretical and experimental spectroscopy of crystalline and amorphous solids, liquid crystals, biological objects and polymers, nanosystems, thin films, surface and intermolecular interactions. Non-linear optical phenomena, computer simulation, as well as state-of-the-art spectroscopic instrumentation and methods are included. Abstracts are published as received from the authors.

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В збірнику представлені тези доповідей XXIV Міжнародної Школи-семінару імені Галини Пучковської “Спектроскопія молекул і кристалів” (25-30 серпня 2019 р., м. Одеса, Україна). В тезах викладено нові результати досліджень з основних напрямків сучасної теоретичної і експериментальної спектроскопії неметалічних кристалів, аморфних речовин, рідких кристалів, полімерів і біологічних об’єктів, нанорозмірних систем, тонких плівок, поверхні і міжмолекулярної взаємодії. Також розглянуто такі напрямки як нелінійно-оптичні явища, комп’ютерне моделювання, нові прилади та методи спектральних досліджень.

Тези надруковано в авторському поданні.

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The Combined Effect of Ultraviolet Radiation and Ozone in Disinfecting Pool Water

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Operation of pools requires a complex of measures for filtering and disinfection of water [1, 2]. An extremely urgent task when disinfecting water in swimming pools is the use of UV-technologies, which completely eliminate pathogenic microflora and do not result in formation in the process of decontamination of toxic compounds. Bacteriological studies of water in the pool found that ultraviolet decontamination does not meet the requirements of the general microbiological number of CU/cm³, because no after effect radiation. Additional ozonation with the use of UV-disinfection technology can provide the necessary bacteriological purity of water in the pools of small volumes.

The device for the complex disinfection of water in pools by UV irradiation and with the use of ozone produced by low-pressure discharge lamps of this device is developed. [3].

The study of the effectiveness of bactericidal decontamination of water using the installation was carried out in a pool of 75 m³. This installation provides a dose of irradiation of water not less than 25 J/m² and additional ozonation with an amount of ozone of approximately 0.1 g/m³ of water. In order to ensure circulation of water, at least 4 times the exchange, two sets of capacity of 8 m³/h were installed per day. At additional ozonation, the microbiological number does not exceed 20 CFU/cm³. Additional ozonation (with a dose of 0.1 g/m³) using the UV technology of disinfection of water provides the necessary bacteriological purity of water in small pools, while the residual concentration of ozone in water does not exceed 0.015 mg/l.

- [1]. DIN 19643-1. Chemical preparation of water for swimming and bathing pools. Part 1: General Requirements
- [2]. SanPiN 2.1.2.568-96. Hygienic requirements for the device, operation and water quality of swimming pools. Sanitary rules and regulations.
- [3]. Semenov A., Kozhushko G., Sakhno T. Bactericidal disinfection of water in pools with complex action of ozone and UV radiation Scientific and technical collection // Urban management of cities. Series: Engineering Sciences and Architecture, 2018, 7 (146) 264-270.

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