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THE FEATURE PROPERTIES OF PHOTONIC CRYSTAL FIBER WITH HOLLOW CORE FILLED BY NITROBENZENE

TRAN QUOC VU[1], CHU THI GIA TRANG[2], LE VAN MINH[2], NGUYEN THI THUY[3], NGUYEN THI HONG PHUONG[4], DOAN QUOC KHOA[5], DINH XUAN KHOA[6], LE XUAN BAO[6], VO THI MINH NGOC[7] AND CHU VAN LANH[6,†]

[1]*Thu Khoa Nghia High School for The Gifted, Chau Doc city, An Giang, Vietnam*
[2]*School of Engieering and Technology, Vinh University, 182 Le Duan, Vinh city, Vietnam*
[3]*Hue University of Education, Hue University, 34 Le Loi Street, Hue City, Vietnam*
[4]*Nguyen Chi Thanh High School, Hoa Thanh district, Tay Ninh province, Vietnam*
[5]*Quang Tri Teacher Training College, Dong Ha, Quang Tri province, Vietnam*
[6]*School of Natural Science Education, Vinh University, 182 Le Duan, Vinh City, Vietnam*
[7]*Huynh Thuc Khang High School, La Grai district, Gia Lai province, Vietnam*

[†]*E-mail:* chuvanlanh@vinhuni.edu.vn

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Abstract. *In this paper, a photonic crystal fiber (PCF) with core infiltrated with Nitrobenzene is proposed and investigated. Its feature properties such as the effective refractive index, effective mode area, chromatic dispersion, and confinement loss have been numerically simulated. The obtained results show that characteristic quantities of PCF with core infiltrated with Nitrobenzene (PCF-N) have some advantages in comparison to PCF with core infiltrated with Toluene (PCF-T) at 1.55 μm wavelength. For the purpose of supercontinuum generation, two optimal structures with lattice constants, $\Lambda = 2.0$ μm and $\Lambda = 2.5$ μm, with filling factors $d/\Lambda = 0.3$ are identified.*

Keywords: photonic crystal fibers; nonlinear optical materials; supercontinuum generation.

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