Photonic Crystals for Advanced Optical Computing

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Abstract. This paper investigates the use of photonic crystals in optical computing applications. By designing and fabricating photonic structures with tailored optical properties, the study aims to enhance computational efficiency and speed. The findings suggest that photonic crystals could revolutionize optical computing technologies, providing novel solutions for processing and transmitting information at unprecedented rates.

Keywords: Photonic Crystals, Optical Computing, Information Processing, Nanophotonics, Light Manipulation

Introduction

Optical computing is an emerging field that promises to revolutionize information processing and transmission by leveraging the unique properties of light. Photonic crystals, with their ability to manipulate light at the nanoscale, offer exciting opportunities for advancing optical computing technologies. This article explores the design and fabrication of photonic crystals with customized optical properties, aimed at enhancing computational efficiency and speed. Through detailed experimentation and analysis, we demonstrate the potential of these structures to transform optical computing, offering novel solutions for high-speed information processing.

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