

Our new paper in “Optical and quantum electronics”

Congratulations to our new paper “A design procedure for fan-out improvement in all-optical photonic crystal logic design” by Hojjat Sharifi, Seyyede Mehri Hamidi and Keivan Navi

In this paper, a general method is proposed to improve the fan-out parameter for all-optical logic gates and functions. Two different types of devices are designed to increase the fan-out of a logic operation and its inverted logic. Nonlinear cavities are used to design driving units. Silicon nanocrystal is used as the nonlinear material to create the required frequency shift for different values of input power. Plane wave expansion and finite difference time domain methods are used to simulate and analyze the proposed structures. The propagation delay of the proposed structure is less than 1.5 ps and the maximum required power for fan-out of three is 15 W.

