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Cheaper fabrication for photonic crystals

By [Joanne Aslett](#)
[EETimes, UK](#)
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University of Illinois (UI) researchers have developed a method of fabricating features in self-assembled photonic crystals that they believe to be cheaper than current methods.

The features, which will act as 3D waveguides inside photonic crystals, can enhance the potential uses of this class of photonic band-gap materials.

Paul Braun, a UI professor of materials science and engineering and co-author of a paper in Advanced Materials, said: "We have demonstrated, for the first time, that we can take a self-assembled colloidal crystal and create an embedded feature with very high precision."

Current methods for fabricating features inside crystals involve building the crystal layer by layer, and are time-consuming and expensive. Using multi-photon polymerisation and by moving the focal point of a laser scanning confocal microscope, the UI method can be used to create 3D waveguides or optical cavities inside the fully formed, self-assembled crystal structure.

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