

## Abstract

### Physical Properties of Gallium Infiltrated into Opal Photonic Crystals

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**Received:** Thu, 28 Mar 2002 15:13:33

Measurements of the electrical and optical properties of gallium infiltrated into 3D photonic crystals will be presented. These metallic photonic crystals have been fabricated by filling artificial silica opals having a lattice period 300 nm by pure (99.999%) gallium under high pressure (1 kbar) at high temperature (1000 C). Temperature dependence of dc-electrical conductivity was measured from 100 to 300 K. Data on optical reflectivity have been obtained in the wavelength range between 0.3 to 50 microns. Comparison of the experimental data with theoretical predictions will be discussed.

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