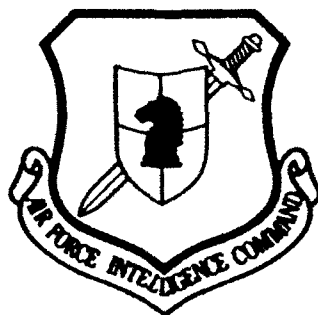


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HIGH-PERFORMANCE NONLINEAR OPTICAL MATERIAL
DEVELOPED IN JAPAN

by

Sheng Li



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HIGH-PERFORMANCE NONLINEAR OPTICAL MATERIAL DEVELOPED IN JAPAN

Sheng Li

As reported by this newspaper based on an announcement by the Asahi Glass Corporation of Japan, the world's best performing nonlinear optical material was developed by the Asahi Corporation. The nonlinear optical three-dimensionality of this new material is 1000 times higher than any known material.

This new material is made by spreading fine particles of cuprous chloride (with semiconductor properties) onto a special glass. The fine cuprous chloride particles are only 5 to 10 nanometers in diameter. After the cuprous chloride particles are melted onto the special glass, they are subjected to heat treatment before cooling, thus producing uniform fine particles.

The valuable property of this optical material depends on the fact that its optical deflectivity is determined by laser radiation intensity. As a result, the nonlinear optical feature of this optical material is 1000 times higher than any organic glass (plastic) or materials (with near-semiconductor properties) with cadmium sulfide blended in as the basis.

The potential application of this new nonlinear optical material is to make superhigh-speed switching elements and components that can respond to the speed of light. Elements and

components made with this type of materials can be used in making optical computers.

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