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Research highlight

Laser carved lines

Using extremely short pulses of laser, researchers have created wonderful structures on a special type of doped glass that could have promising applications in photonic devices¹.

They chose erbium (Er) activated 'Baccarat' glass as a potential candidate for its superior spectrometric properties. They used extremely short pulses of laser that last for 100 femtosecond (one millionth of a nanosecond) to irradiate the doped glass.

The irradiation created about seventy single-line structures with varying energies, scan speeds and slit widths. The appearance of such structures shows the capability of the 'laser direct writing technique' to fabricate several optical components, leading to integration of active and passive devices on a single substrate for photonic applications.

Signal enhancement is an important figure of merit for the device to function as an amplifier in telecommunication. A signal enhancement of 2.3 dB (Decibel) was also observed.

Er-activated Baccarat glass, with its high quantum efficiency and the ease of fabrication could have multifarious applications in photonics, the researchers say.

The authors of this work are from: *School of Physics, and ACRHEM, University of Hyderabad, Hyderabad, India; CNR-IFAC, Rome, Italy and Université des Sciences et Technologies de Lille, Laboratoire de Spectrochimie Infrarouge et Raman, Villeneuve d'Ascq cedex, France.*

References

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