

A Publication of the Materials Research Society

Volume 23, Number 7 ISSN: 0883-7694 CODEN: MRSBEA

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ON THE COVER: (Middle) Plates of AgGaS₂ (yellow) and AgGaSe₂ (gray-black) cut from 50-mm-diameter crystals are subsequently fabricated into finished components like the 5 × 5 × 40-mm³ bars displayed in the foreground. The ordinary- and extraordinary-ray transmission versus wavelength curves for AgGaSe₂ (solid) and the related quaternary AgGa_xIn_(1-x)Se₂ (dashed) illustrate the clarity of these crystals near the short-wavelength band edge. Adding indium to AgGaSe₂ shifts the band edge and allows noncritically phase-matched second-harmonic generation of CO₂ laser emission. Courtesy of Cleveland Crystals, Inc. Photograph by Jeff Bohn and Gary Catella. For more information, see the article by G.C. Catella and D. Burlage on p. 28 of this issue.

(Top Right) Seeded ZnGeP₂ crystal in a PBN-coated boat with seed well, along with laser crystals cut from this crystal. For more information, see the article by P.G. Schunemann and T.M. Pollak on p. 23 of this issue.

(Bottom Right) Several MACMOLECULE™ views of the ZnGeP₂ chalcopyrite crystal structure. The yellow spheres indicate the anion sublattice, and the red and green spheres indicate the ordered cation sublattice.

(Bottom Left) Photon backscatter scan of a ZnGeP₂ surface showing a synthetic color map of the nonspectrally scattered helium-neon laser light from a ZnGeP₂ optical surface. The intensity of scatter is a direct measure of the subsurface damage. In this instance, a line scan of the angular dependence is displayed. Each radial position corresponds to a different point on the line scan. The red burst indicates that a linear defect is present in this early sample.

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MRS Bulletin (ISSN: 0883-7694) is published 12 times a year by the Materials Research Society, 506 Keystone Drive, Warrendale, PA 15086-7573. Periodicals postage paid at Warrendale, PA and at additional mailing offices. POSTMASTER: Send address changes to *MRS Bulletin* in care of the Materials Research Society, at the address listed; phone 724-779-3003; fax 724-779-8313. Printed in the U.S.A.

Additional copies of articles in *MRS Bulletin* may be made at \$2.50 per article. This fee can be paid to the Materials Research Society through the Copyright Clearance Center, Inc., 27 Congress Street, Salem, MA 01970.

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