

X-Ray Mask with SiC Membrane for LIGA Process

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Abstract

In order to develop a practical LIGA process, a high contrast X-ray mask with a SiC membrane was produced. The X-ray mask was composed of a 3 μm thick Au as an absorber, a 2 μm thick SiC as a membrane of dimensions 10 mm x 30 mm and a 2 μm thick Si of dimensions 3 inch as a frame. A feature of the X-ray mask is the application of a SiC membrane, which has high permeability to X-rays, high thermal conductivity and moderate tensile stress. As a result, Ni microstructures with a maximum aspect ratio of 100, corresponding to 2 μm width and 200 μm height, were fabricated by the LIGA process.

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