

## **Fabrication of Collimators for Gamma-ray Imaging**

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### **ABSTRACT**

Collimators capable of higher resolution and optimized for greater sensitivity can significantly improve the imaging quality of gamma-cameras for single-photon-emission computed tomography of small animals. We are applying deep x-ray lithography and gold electroforming techniques to fabricate high-resolution collimators with continuous, smooth, and thin septa. Negative SU-8 photoresist was used for mold fabrication. To be efficient, collimators for gamma-cameras designed to image 140 keV gamma-rays should be over 1.5 cm tall. The height of the collimator can be achieved by stacking the appropriate number of layers.

**Keywords:** SU-8, high aspect ratio, collimator, LIGA, gold plating, deep x-ray lithography