

Development of a Freestanding Copper Antiscatter Grid Using Deep X-Ray Lithography

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Abstract

A prototype freestanding copper antiscatter grid with parallel lamellar walls has been fabricated using deep x-ray lithography and electroforming. The freestanding copper grid has square shaped lamellar walls that are 25 μm thick and 1 mm tall with a 550 μm period. For mammography applications, the lamellar walls have to be aligned to a point x-ray source of the x-ray system. To achieve this goal, we investigated a dynamic double-exposure technique. Our progress in using stacked exposures and use of the photoresist SU-8, both to reduce fabrication cost, is also presented.