

## **The Production of Multilayer-Coated X-ray Mirrors Via Electroforming**

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As part of a project to develop methods of placing highly reflective multilayer coatings on the inside of Wolter I mirrors, we have been pursuing a program of measuring flat mirrors. These flats have been produced and examined at various stages of the process we plan to use to fabricate multilayer coated Wolter I mirrors. The flats were measured via optical profiler, AFM, (both done at Brookhaven National Lab) and X-ray reflection (done at the Argonne National Lab (ANL) Advanced Photon Source (APS)). We report for the first time, to our knowledge, the successful placement of multilayers on an electroform by depositing the multilayers on a master and then electroforming onto this master and removing the multilayers, intact, on the electroform. This process is the one we plan to use to place multilayers on the inside of Wolter I optics. Another potential application is making optics for use in X-ray lithography.