

D25

## **Special manufacturing and joining techniques used in the manufacture of the APS front end and beamline components**

M. C. Townsend

*Accelerator Technology Group, Oxford Instruments, Osney Mead, Oxford, OX2 0DX, England*

The front ends and beamlines of the APS are designed to control, define, and/or confine the X-ray beam. Power densities of the order of 500 watts/mm<sup>2</sup> are generated by the intense undulator beams, thus conventional materials and cooling techniques for beamstops, slits and masks are inadequate.

Extensive use of Glidcop, tungsten, and molybdenum has been made in the design of these components, and this has resulted in the need to develop and use specialised manufacturing and joining techniques.

Experience gained using these techniques for the fabrication of APS front end and beamline components is presented.