B07

Cooling solutions for high heat load optics

D. Morris
Accelerator Technology Group & Photon Sciences Ltd., Oxford Instruments, Osney Mead, Oxford, OX2 0DX, England

G. H. Harding, M. P. Cox, and D. Lunt
Accelerator Technology Group, Oxford Instruments, Osney Mead, Oxford, OX2 0DX, England

Heat loads on optical components at third generation synchrotron sources such as the APS present beamline designers with difficult and complex engineering problems. A number of solutions have been proposed, such as pin-post water cooling, cryogenic cooling and liquid gallium cooling.

This paper describes both a cryogenic cooling system and a liquid gallium pumping system that have been developed specifically for the APS high heat load beamlines. Also presented is a potential solution for the first mirrors on high heat load beamlines, based on liquid gallium internal cooling of a silicon carbide mirror.