

**On the Thermal Deformation Analyses of CVD Silicon-Carbide Mirrors, M.C. LIN, K.L. TSANG,** SRRC Hsinchu - Due to the high thermal conductivity and low expansion coefficient, the CVD silicon carbide mirrors have been chosen as the high thermal loaded optical components for the undulator beamlines at SRRC. The deformation of these mirrors exposed to the highly localized undulator photon beams have been studied. The commercially available analytical codes, ANSYS and MSC/PATRAN, have been employed for the 3-D model analysis. Several different mirror shapes/structures and cooling methods have been used for the simulation. The temperature distribution and hence the deformation/stress of the thermally loaded mirror surfaces have been studied. The results show that the deformation is not symmetric even though the thermal loading is symmetric. This is caused by the clamping method of the mirror or its holder. The effect of the this asymmetric deformation will be also discussed.