

NAME _____

HW 4 See website for due date

Prof. S. H. Garofalini

Your company's new x-ray diffractometer was innovative. An Al shield was previously used to surround the Cu x-ray source and was 0.5 cm thick as an equivalent replacement for Pb. However, due to non-specific issues, management told you to use a transparent shield, SiO_2 to surround the Cu x-ray source to get the same equivalent x-ray shielding as the Pb or Al.

Calculate the thickness of your SiO_2 shield and prove that the thickness of the SiO_2 protective material that you used would result in an equivalent exposure of the x-rays from escaping as in the Pb or Al cases.