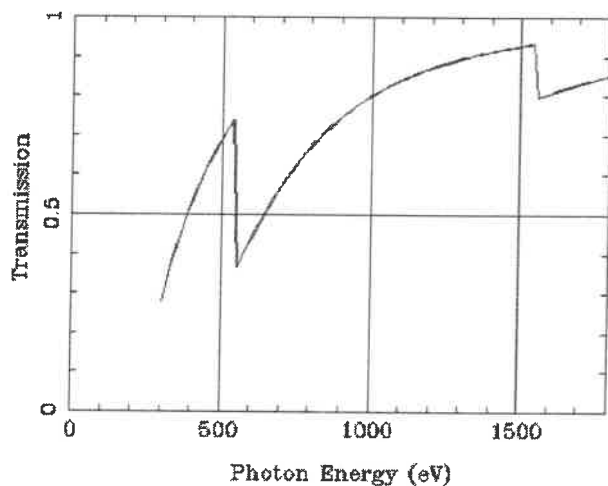


CH314 – Structural Analysis

Part III : X-ray Tools

Exercise 1, Nov 23

The Phoenix beamline at the Swiss Light Source can record absorption scans in the soft X-ray regime. Figure out the elements in the following sample. Use the electron binding energy tables from the x-ray data booklet on moodle or table on slide 18. Can you guess the material?

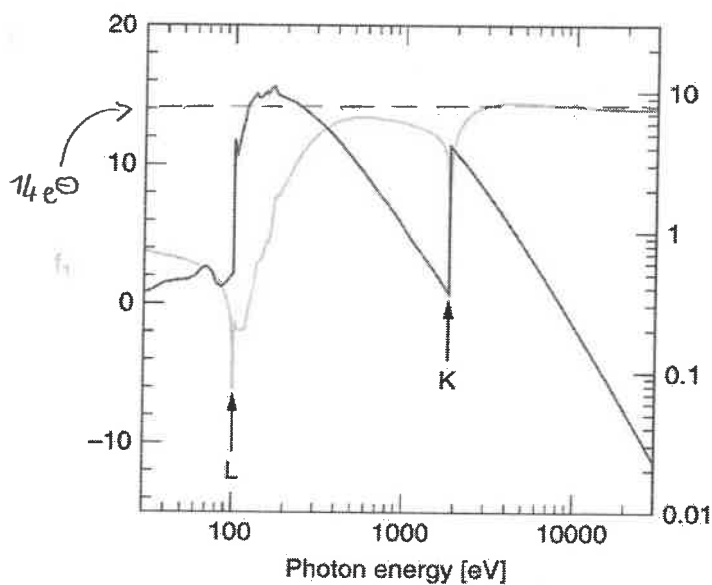


First edge: Oxygen at 543 eV

Second edge: Aluminum at 1560 eV

$\Rightarrow \text{Al}_2\text{O}_3$

In the next figure the atomic scattering factors f_1 and f_2 of a single and simple element are plotted. How many electrons does each atom contain? What is the material?



14 electrons: Silicon

K-edge: 1839 eV

L-edge: 150 eV

L₂-edge: 100 eV

Label the following figure

