Department of information technology and Media
Börje Norlin

PROJECT - XOP simulation

A written report on the simulation project should be handed in. This report contributes to the grading of the course. The project report is individual (one student). The report should be handed in January 25:th 2013.

Use XOP to calculate theoretically

- The spectrum of the X-ray source 60 keV and 100 keV (tungsten target)
- The spectrum of the X-ray source after a 1 mm Aluminium filter
- The spectrum of the X-ray source that is absorbed in a 500 µm thick silicon sensor.
- The spectrum of the X-ray source that is absorbed in a 500 µm thick CdTe sensor.
- The spectrum of the X-ray source that is absorbed in a 500 µm thick GaAs sensor.

- Use XOP to calculate the attenuation achieved when shielding the Cs gamma source used in the dosimetry task in the lab course.
- Use XOP to calculate the attenuation of the gamma contribution from the Am alfa source used in the same lab. *Am241 has a gamma particle with energy 59 keV. Discuss how this peak is affected by the absorption in the sensor compared to the Alfa-peaks.*

The simulation software XOP is a freeware that can be downloaded from
http://www.esrf.eu/Instrumentation/software/data-analysis/xop2.3

No installation is needed for XOP in windows, hence you can run it on a computer where you do not have administrative rights, as long as you are working in folders where you have writing access.

XOP cannot run on a 64 bit windows version. If you only have access to such computers you can run it in a LINUX environment if you booth the computer from a CD or USB-disk.