

## **20. PYROLYTIC GRAPHITE AS A SELECTIVE NEUTRON FILTER**

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The transmission of neutrons through pyrolytic graphite (PG) crystals, set at different angles with respect to incident beam, were calculated using an additive formula. A computer program HOPG was developed to provide the required calculation. An overall agreement between the calculated neutron transmissions through a slab of 1,85 mm thick PG crystal with an angular spread of c-axes of  $0,4^\circ$ , set at different angles to the incident beam, and the available experimental ones in the wavelength range from (0,02 to 1,4) nm were obtained. A feasibility study for use of PG crystal as an efficient second-order neutron filter is detailed in terms of crystal thickness, angular spread of c-axes and its orientation with respect to the neutron beam. It was shown that a PG crystal with an angular spread of  $0,8^\circ$  is sufficient for optimum scattering of second-order neutrons in the wavelength band (0,384 - 0,183) nm, by adjusting the filter in an appropriate orientation.