

” Graphite optics - current opportunities, prospects and limits” Grigorieva I., Antonov A., Gudi G.

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Graphite optics consists of thin layers of Pyrolytic Graphite deposited on a substrate of focusing shape. Pyrolytic Graphite is a perfect artificial carbon obtained by annealing of carbon deposit at temperatures about 3000°C under deformation. Varying annealing procedure one could get Pyrolytic Graphite of different mosaic structure and mechanical properties. Graphite Optics made by Optigraph GmbH on the base of thin films of different type of PG (standard HOPG, HOPG-flex and HAPG) are discussed.

HOPG-flex and HAPG optics are of the main interest as they offer fast any required shape including full figure of revolution, wide range of possible sizes and radii from 1000 to few mm. HAPG optics has mosaic spread 0,1° and could provide in von Hamos scheme resolution comparable with ideal crystals and more than order of magnitude bigger reflectivity. Application of different materials as a substrate is discussed. The optics of both types is used for RFA and plasma analysis. Spectrometers of enhanced efficiency on the base of HAPG optics are used for discrimination of EXAFS, XANES and XES fine spectra at set-up on laboratory and SR X-ray source.

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