1.4.39. X-RAY TOMOGRAPHY: FORM MICRO TO NANO

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X-Ray tomography gives us the opportunity of non-destructive investigation of opaque objects. The possibility to obtain three-dimensional inner structure of a set of shadow projections makes this an indispensable technique in various branches of industry, including defectoscopy, as well as biology and medicine.

We justify in the present work the choice of the optimum X-Ray wavelength for the study of different types of materials. The results obtained in the study structure of biological and mineral samples with a resolution of 6 – 13 μm are given.

We show the possibility to apply magnifying X-Ray optical elements in order to increase the resolution up to 1 μm. We present also the results of the microtomography experiments with such resolution.

The possibility to increase the resolution up to the submicron level, by the use magnifying X-Ray optical elements or the schemes with the projection magnification is discussed.