

Title (en)
ROENTGEN MICROSCOPE

Publication
EP 0270968 A3 19890802 (DE)

Application
EP 87117658 A 19871128

Priority
DE 3642457 A 19861212

Abstract (en)
[origin: US4870674A] An x-ray microscope in which the object is illuminated coherently or partially coherently via a condenser with quasi-monochromatic x-radiation and is imaged enlarged in the image plane by a high resolution x-ray objective. To obtain the highest possible image contrast, there is arranged in the Fourier plane of the x-ray objective an element which imparts a phase shift to a preselected order of diffraction of the radiation. The element extends over the surface region in the Fourier plane which is acted on here by the diffracted radiation to be influenced. The utilization of the phase shift of a preselected order of diffraction of the radiation as compared with the uninfluenced radiation makes it possible to carry out examinations, in particular of biological structures, with a low dose of radiation and nevertheless to produce a high image contrast. Moreover, it is possible to shift the wavelength region of the x-ray radiation to be used toward shorter wavelengths at which, as a result of the lesser absorption, x-ray microscopy was not meaningfully possible heretofore.

IPC 1-7
G21K 7/00

IPC 8 full level
G21K 7/00 (2006.01)

CPC (source: EP US)
G21K 7/00 (2013.01 - EP US)

Citation (search report)
• [A] US 4105289 A 19780808 - HERSHEL RONALD S
• [X] NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH, Sektion A, Band A246, Nr. 1/3, Mai 1986, Seiten 698-701, Elsevier Science Publishers B.V., Amsterdam, NL; X.-S. XIE et al.: "Soft X-ray microscopy at the hefei synchrotron radiation laboratory"
• [A] JOURNAL OF THE OPTICAL SOCIETY OF AMERICA, Band 64, Nr. 3, März 1974, Seiten 301-309, New York, US; J. KIRZ: "Phase zone plates for X rays and the extreme UV"

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US5550887A; WO9508174A1

Designated contracting state (EPC)
BE CH DE FR GB IT LI NL SE

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