

Title (en)  
Roentgen microscope.

Title (de)  
Röntgen-Mikroskop.

Title (fr)  
Microscope à rayons X.

Publication  
**EP 0270968 B1 19931215 (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)

Cited by  
US5550887A; WO9508174A1

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

DOCDB simple family (publication)  
**EP 0270968 A2 19880615; EP 0270968 A3 19890802; EP 0270968 B1 19931215;** DE 3642457 A1 19880630; DE 3788508 D1 19940127; DK 174016 B1 20020415; DK 652287 A 19880613; DK 652287 D0 19871211; JP H0814640 B2 19960214; JP S63163300 A 19880706; US 4870674 A 19890926

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**EP 87117658 A 19871128;** DE 3642457 A 19861212; DE 3788508 T 19871128; DK 652287 A 19871211; JP 30880687 A 19871208; US 13075587 A 19871209