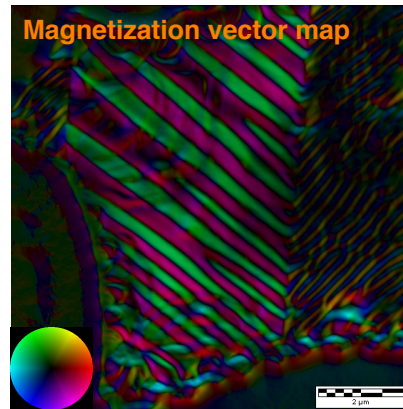


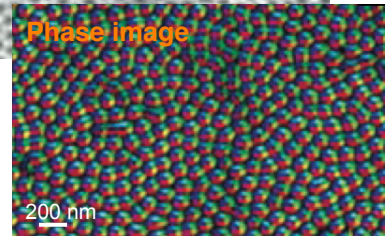
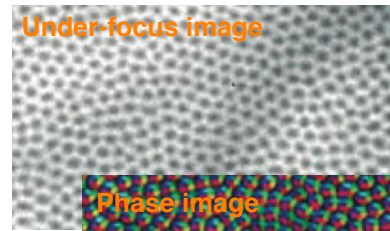
QPt

DigitalMicrograph Plug-in

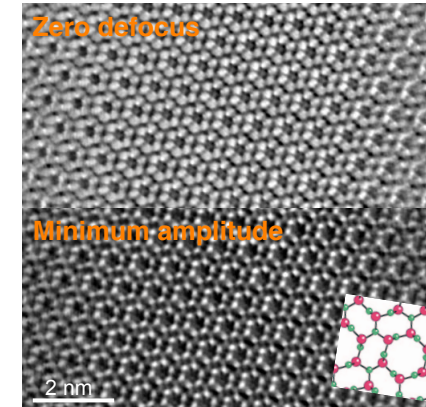
Quantitative Phase Technology



Magnetic Field of (PrCaSr)Mn₃O [2]



Skyrmion crystal structure in Fe_{0.5}Co_{0.5}Si [3]



Atomic Resolution Phase Image of Si₃N₄ [4]

QPt derives a phase image only from *three* ordinary bright-field images based on the Transport of Intensity Equation (TIE), and eliminates artifacts in a defocused image. QPt employs Quantitative Phase Imaging (QPI) technology based on Fast Fourier Transform (FFT) [1], and provides a solution to phase contrast electron microscopy.

Key Features

◆ QPt Basic

- Performs Image Alignment
- Derives a phase image at the middle plane (*in-focus*).

◆ QPt (in addition to Basic)

- Generates a magnetic/electric field (left and middle)
- Generates a knife edge (Schlieren) image

◆ QPt Pro (32bit only): Emulates Differential Interference Contrast, Zernike Phase Contrast, Hoffman Modulation Contrast and Dark-field images

◆ HREM module: Corrects *spherical-aberration* from atomic-resolution image (right)

Credits: (PrCaSr)Mn₃O: courtesy Masaya Uchida. MINS, Tsukuba;
Silicon Nitride: courtesy of Christian Kisielowski, NCEM, Berkeley.

Reference: [1] D. Paganin and K.A. Nugent, Phys. Rev. Lett. 80 (1998) 2586–2589. [2] K. Ishizuka and B. Allman, Microscopy Today 13 (2005) 22-24. [3] X.Z. Yu, Y. Onose, N. Kanazawa, J.H. Park, J. H. Han, Y. Matsui, N. Nagaosa and Y. Tokura, Nature 465 (2010) 901-904. [4] K. Ishizuka and B. Allman, J. of Electron Microsc. 54 (2005) 191-197.