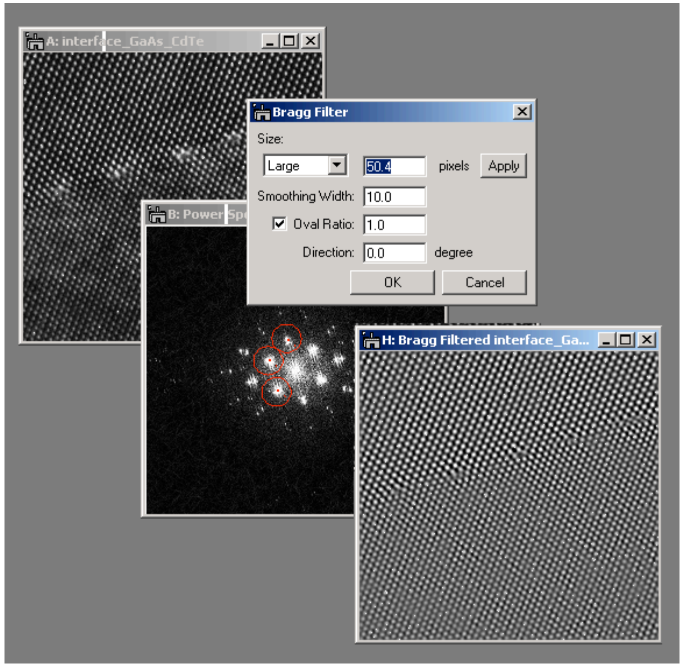
PPA

DigitalMicrograph Plug-in

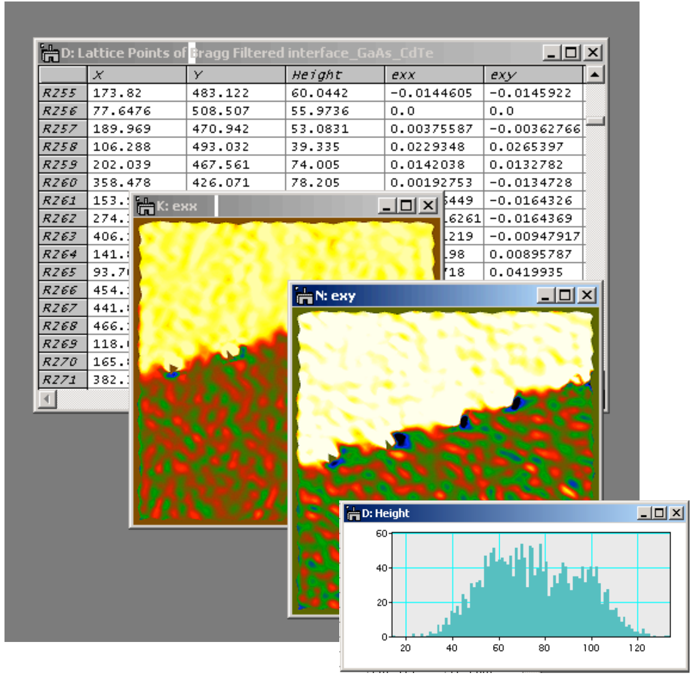
Peak-Pairs Analysis

High-Resolution Peak Measurement and Strain Mapping Analysis from HREM images



Bragg Filter

Size:
Large ▾ 50.4 pixels [Apply]
Smoothing Width: 10.0
☑ Oval Ratio: 1.0
Direction: 0.0 degree
[OK] [Cancel]



D: Lattice Points of Bragg Filtered interface_GaAs_CdTe

	X	Y	Height	exx	exy
R255	173.82	483.122	60.0442	-0.0144605	-0.0145922
R256	77.6476	508.507	55.9736	0.0	0.0
R257	189.969	470.942	53.0831	0.00375587	-0.00362766
R258	106.288	493.032	39.335	0.0229348	0.0265397
R259	202.039	467.561	74.005	0.0142038	0.0132782
R260	358.478	426.071	78.205	0.00192753	-0.0134728
R261	153.			449	-0.0164326
R262	274.			6261	-0.0164369
R263	406.			219	-0.00947917
R264	141.			98	0.00895787
R265	93.7			18	0.0419935
R266	454.				
R267	441.				
R268	466.				
R269	118.				
R270	165.				
R271	382.				

PPA offers peak intensity analysis and local strain map calculation from standard HREM images.

PPA is based on Peak Pairs algorithm originally developed by Pedro L. Galindo [1].

Key Features

◆ Peak location at sub-pixel resolution using 2D filtering (Bragg, Wiener,…) and cubic interpolation techniques

◆ Local strain tensor determination using Peak Pairs Analysis [1] at atomic-column level.

◆ Local representation of strain at the atomic-column level using color scales superimposed on HREM image

◆ Automatic peak intensity measurement.

◆ Image distortion correction due to a CTEM projector lens system [2] or a STEM scanning system.

References:

[1] P Galindo, S Kret, AM Sánchez, J-Y Laval, A.Yáñez, J Pizarro, E Guerrero, T Ben and SI Molina, Ultramicroscopy 107 (2007) 1186-1193: The Peak Pairs algorithm for strain mapping from HRTEM images.

[2] F Hüe, CL Johnson, S Lartigue-Korinek, G Wang, PR Buseck and MJ Hÿtch, Journal of Electron Microscopy 54 (2005) 181-190: Calibration of projector lens distortions.

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