

**DIFFRACT: Diffusion-based Restoration via Adaptive Control and
Thresholding for Diffraction Imaging**

Supplementary Material

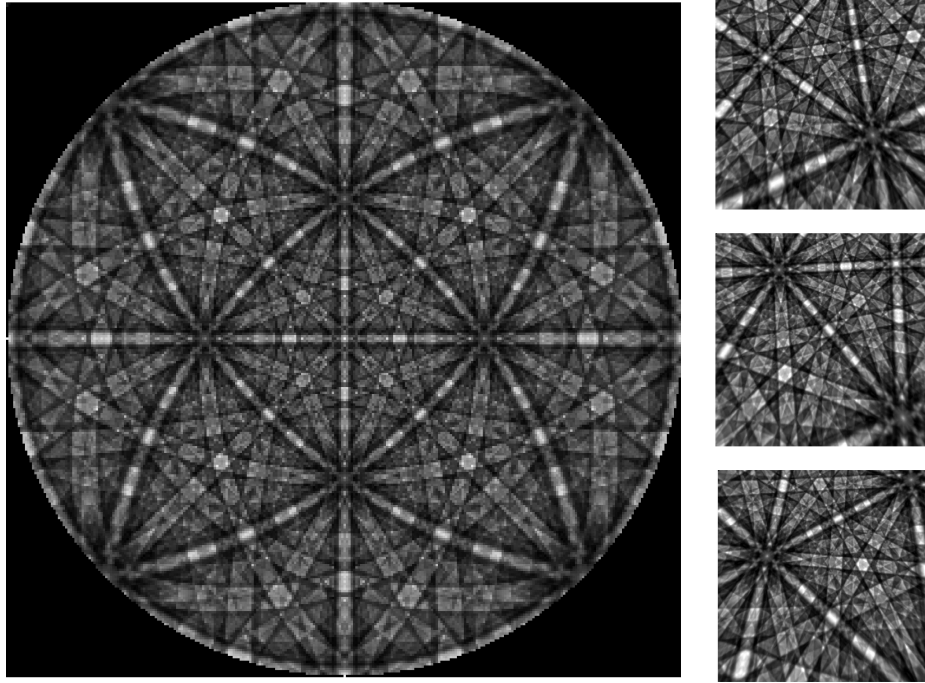


Figure S6. An example of Master Pattern (MP) and its components identified during Spherical Indexing. The same components of MP served as ground truth in model training.

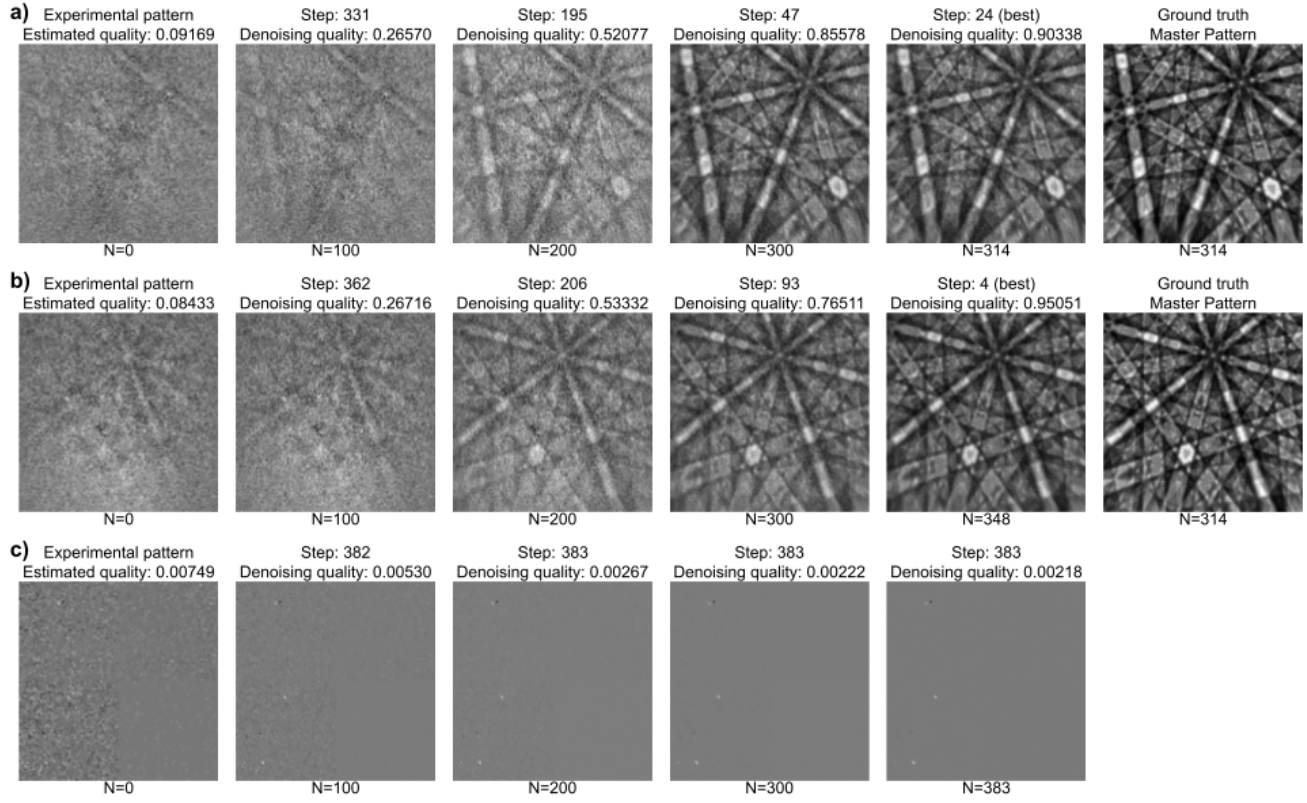


Figure S7. The results of image restoration. N - the number of restoration cycles (the maximum number is $T = 384$). Step is the model's diffusion step estimation (the lower the more restored the image is according to model estimation). Initial quality (*estimated quality*) is the predicted quality of the original pattern $\hat{q}$; *denoising quality* - the model estimation of cross-correlation result between restored image and the ground truth $\hat{r}$. The a) and b) - EBSD patterns for Nickel sample of different quality; c) - instrumental noise sample.

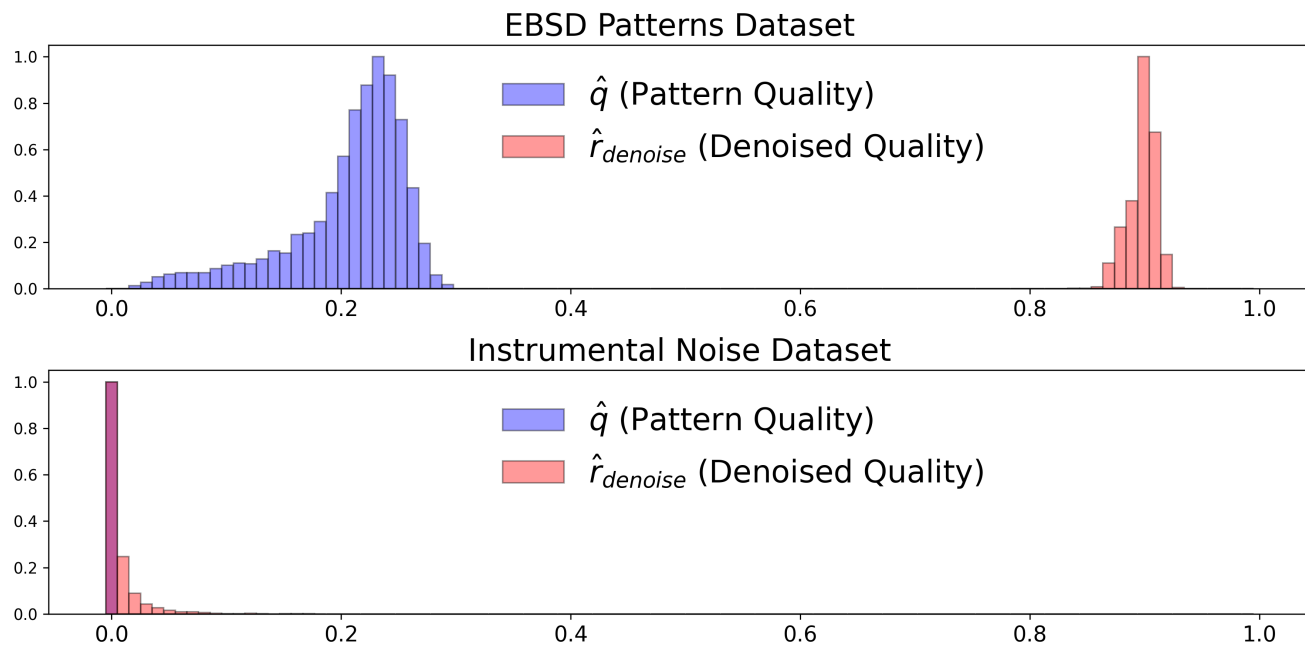


Figure S8. Predicted values of $\hat{q}$ (pattern quality) and $\hat{r}_{denoise}$ (denoised quality) for a proper dataset, including actual EBSD patterns and images with instrumental noise.