



Contribution ID: 428

Type: **Poster Presentation**

Enhancing Reciprocal Space Resolution in MeV Ultrafast Electron Diffraction with Permanent Magnet Lenses

Ultrafast electron diffraction (UED) probes structural dynamics on femtosecond timescales and angstrom spatial scales. Artificial crystals are a novel experimental target for UED beams. Typically composed of lattice-mismatched atomic layers, the repeating atomic patterns in artificial crystals can have periods several nanometers in length, which produces intricate satellite features in the electron diffraction pattern. Resolving fascinating satellite diffraction peaks in a compact UED beamline requires high angular magnification. In this work, we describe the implementation of post-sample angular magnification using a pair of compact permanent magnet solenoid lenses. Configured as an objective-eyepiece pair, these lenses achieve a camera length of 50 meters, i.e., the lens system is equivalent to extending the beamline drift length by a factor 15. We demonstrate the advantages of this scheme with data that resolves satellite diffraction peaks in a heterostructure sample.

Please consider my poster for contributed oral presentation

No

Would you like to submit this poster in student poster session on Sunday (August 10th)

No

Footnotes

Funding Agency

I have read and accept the Privacy Policy Statement

Yes

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