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## Solid-state driven X-band linac for electron microscopy

*Sunday 1 June 2025 14:00 (2 hours)*

Transmission Electron Microscopes (TEM) require high voltage DC electron sources, which can quickly grow in size and cost at the higher energies required for standard TEM imaging. We present the progress on a low cost, compact solid-state-driven RF linac to replace high power electron guns in micro-crystal electron diffraction setups. The system accelerates electrons to 50 keV electrons with a 4 cell standing wave structure, where each cell is individually powered by an X-band solid-state amplifier. Future expansions on this design could function as a compact (order of 1 meter) source of electrons up to 1 MeV.

### Footnotes

### Paper preparation format

LaTeX

### Region represented

America

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**Author:** SHERMAN, Julia (Wellesley College)

**Co-authors:** KRASNYKH, Anatoly (SLAC National Accelerator Laboratory); DHAR, Ankur (SLAC National Accelerator Laboratory); SY, Ann (SLAC National Accelerator Laboratory); NANNI, Emilio (SLAC National Accelerator Laboratory); BOYCE, Mathew (SLAC National Accelerator Laboratory); OTHMAN, Mohamed (SLAC National Accelerator Laboratory); LEWIS, Samantha (Fermi National Accelerator Laboratory); TANTAWI, Sami (SLAC National Accelerator Laboratory)

**Presenter:** SHERMAN, Julia (Wellesley College)

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