

# Structure Determination by Low-Energy Electron Diffraction - A Roadmap to the Future

G. Held<sup>1</sup>

<sup>1</sup>*Diamond Light Source, Didcot, Oxfordshire OX11 0DE, UK*

*georg.held@diamond.ac.uk*

Of all experimental Surface Science techniques, LEED-IV surface crystallography delivers the most complete set of crystallographic data for the near-surface regions of ordered single crystal surfaces (down to  $\approx 1$  nm below the surface). In the last five decades a large number of surface structures have been determined but theoretical and experimental procedures need to be adopted to meet the requirements of new directions in Surface Science [1]. In this talk approaches will be discussed for extracting structural information from disordered and rough surfaces, increasing the experimental data set for large unit cells with complex unit cells, improving the scattering potentials used to calculate LEED-IV curves, and expanding the pressure range of the technique.

[1] Held, G. (2025). *Surf. Sci.* **754**, 112696.