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# A CONSISTENT PATH FOR PHASE DETERMINATION BASED ON TRANSMISSION ELECTRON MICROSCOPY TECHNIQUES AND SUPPORTING SIMULATIONS

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## HIGHLIGHTS

- Simultaneous employment of analytical TEM techniques for a less ambiguous analysis of complicated chemical phases.
- Comparison of FEFF9 simulated energy-differential cross-sections with hydrogenic approximations calculated with SIGMAK3 from K-edges (from Z6 to Z14).
- The role of inner-shell screening factors ( $s$ ) within the hydrogenic approximation.

## ABSTRACT

This work addresses aspects for the analysis of industrial relevant materials via transmission electron microscopy (TEM). The complex phase chemistry and structural diversity of these materials require several characterization techniques to be employed simultaneously; unfortunately, different characterization techniques often lack connection to yield a complete and consistent picture. This paper describes a continuous path, starting with the acquisition of 3D diffraction data – alongside classical

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