



This graphical abstract is a composite figure which combines:

- The picture of the JEOL JEM-ARM200F, in the round image on the right side of the figure.
- The atomic resolution HAADF-STEM image of the grain boundary termination in 3C-SiC film, in the center (yellow contour).
- The image of a core/shell Si/SiO₂ nanowire, at the bottom left side of the figure (violet contour); this image is obtained via superposition of the EFTEM images acquired at the plasmon energy loss of Si (17 eV, in magenta) and SiO₂ (23 eV, in purple).
- The atomic resolution HAADF-STEM image of a CuO nanocrystal, on the left side of the figure (green contour).
- The crystallographic (upper image) and chemical maps (images below) of a Ge-rich chalcogenide film, on the top left side of the figure (cyan contour).