MGA Nanoparticle Thin Films for Enhanced Hydrogen Gas Sensing: Synthesis, Modeling, and Characterization
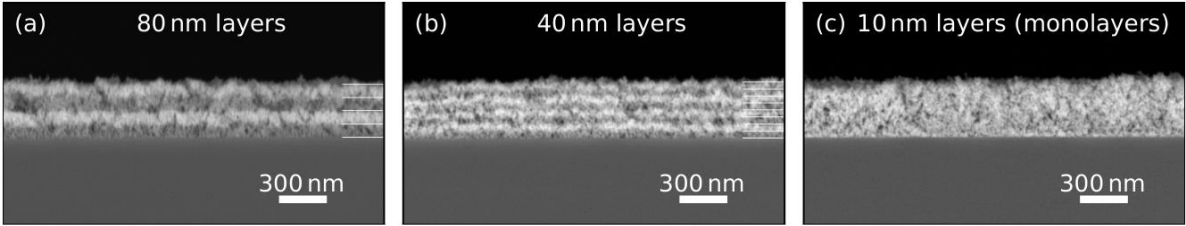

Fig. 1 – SEM cross-sectional micrographs of multilayers of nanoparticle-based thin film composed of CuO and WOx nanoparticles. Images (a, b) feature films with intentionally thickened layers to enhance the visibility of the individual materials, captured in BSE (Backscattered Electron) mode to enhance material contrast. Image (c) displays the final mixed-material composition used for sensorial testing.
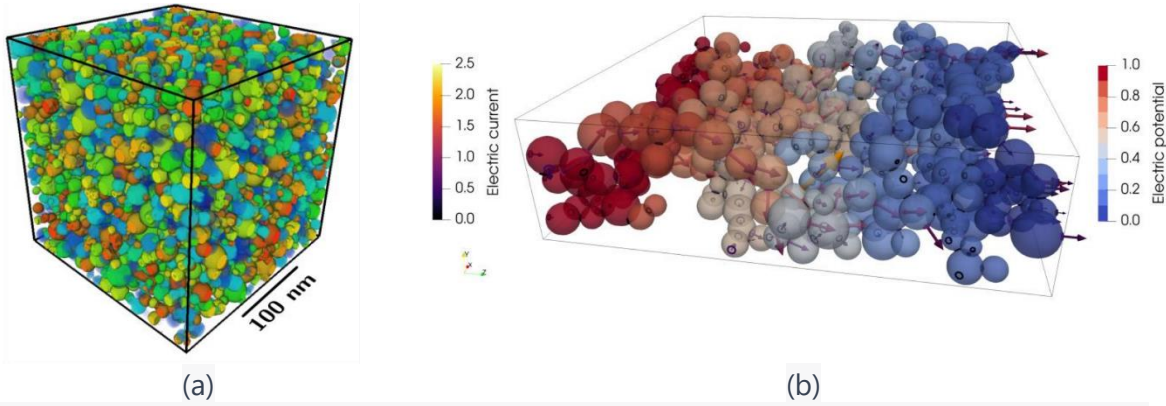

Fig. 2 – Visualization of nanoparticle arrangements and conductivity simulations. (a) Shows the modeled structure of nanoparticles using a hard-sphere packing algorithm. (b) Presents the finite element simulation visualization of the conductivity in the modeled structure.