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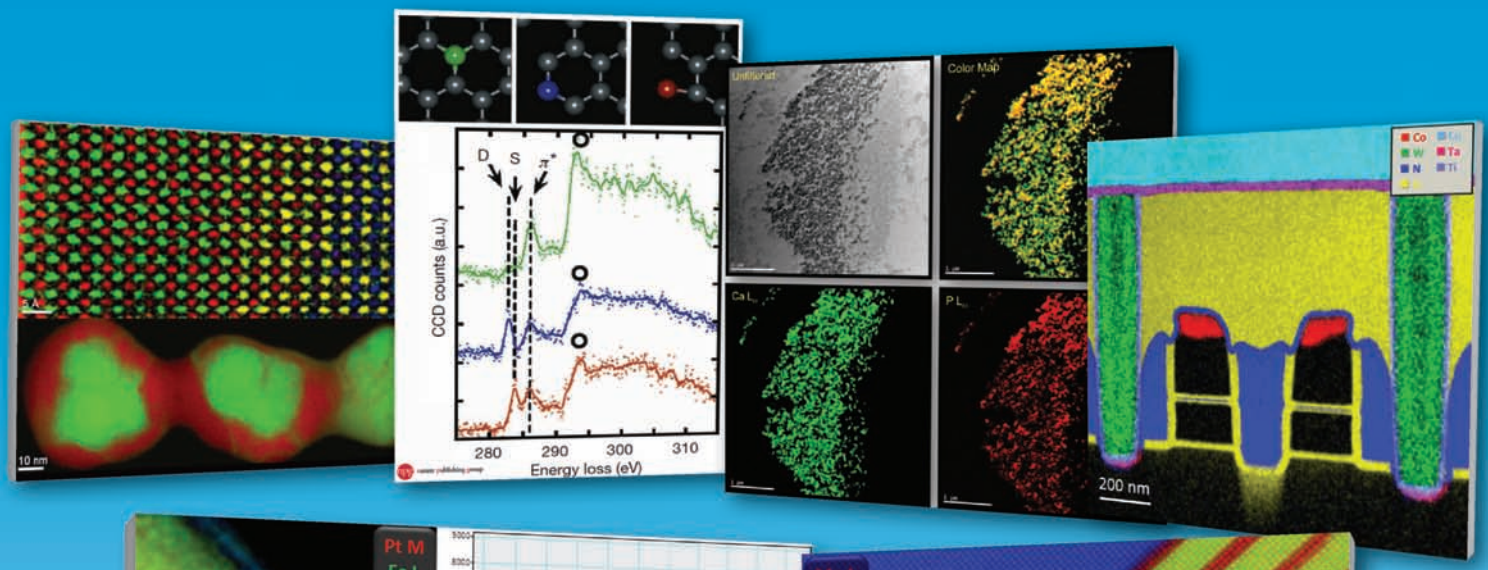
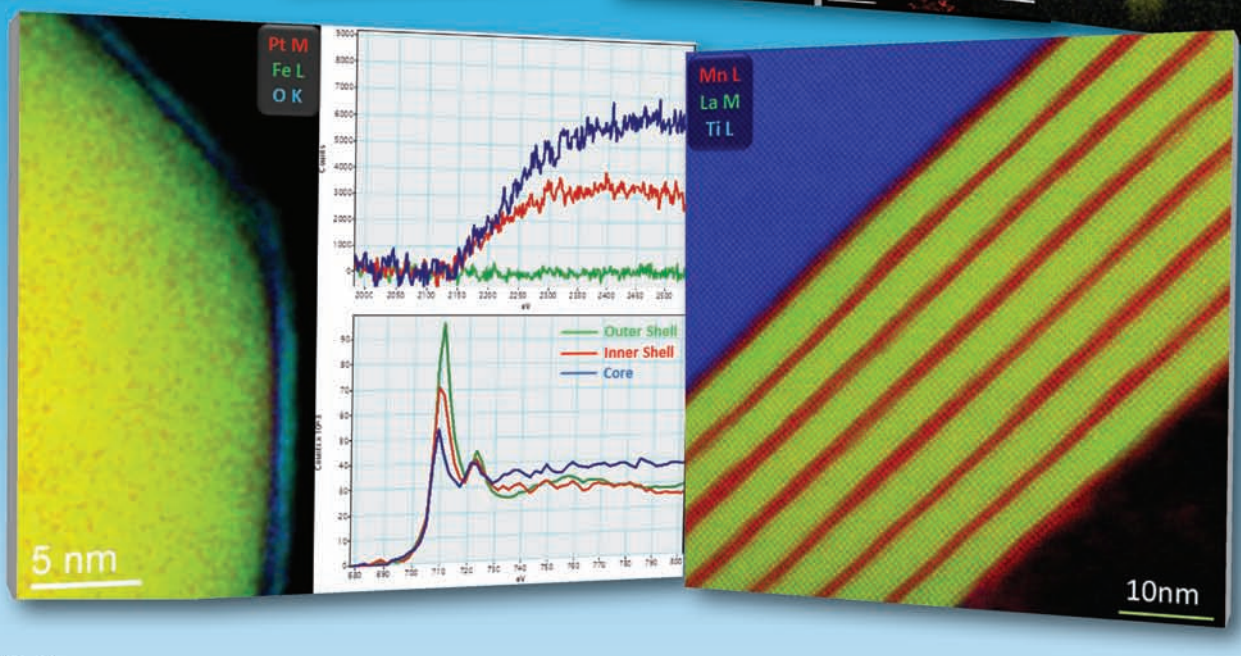
Go beyond simple composition

- True Chemical State Mapping
- Quantitative Surface Plasmon Mapping
- Exceptional Detection Efficiency
- Artefact-Free Elemental Detection





Top Images, left to right:

- (Top) Colorized elemental map showing Sr $L_{2,3}$-edges (green), Ti $L_{2,3}$-edges (red), La $M_{4,5}$-edges (yellow), and Mn $L_{2,3}$-edges (blue). Data captured using a Gatan Enfinium™ER. Sample courtesy of Prof. David Smith, Arizona State University. (Bottom) RGB composite EELS SI image of Au/Pd nanoparticle; Au $M_{4,5}$-edges at 2206 eV in green and Pd $L_{2,3}$-edges at 3173 eV in red. Data captured using a Gatan GIF Quantum®ER. Sample courtesy Dr. Jianfang Wang of The Chinese University of Hong Kong.
- ELNES of individual atoms in graphene. Different states of atomic coordination are illustrated at top. ELNES of carbon K (1s) spectra shown on bottom. Green, blue and red spectra correspond to the normal sp2 carbon atom, a double-coordinated atom and a single coordinated atom, respectively. Data captured using a Gatan Quantum®ER Low-Voltage Special. Data courtesy of K. Suenaga and M. Koshino (AIST, Tsukuba, Japan). Figure 1 from: K. Suenaga et al. "Atom-by-Atom spectroscopy analysis at graphene edge"; Nature 468, 1088 (2010). Permission to use Figure 1 granted by K. Suenaga and Nature Publishing Group. Copyright © 2010, rights managed by Nature Publishing Group.
- Unfiltered, conventional TEM image and elemental maps of a capillary blood vessel captured using a Gatan GIF Quantum®ER. The Ca and P elemental maps were extracted from an EFTEM-SI dataset acquired using Gatan's DigitalMicrograph® software. EFTEM-SI is capable of revealing relative concentrations below 1% as shown in the P elemental map. Sample courtesy of Dr. Wenlang Lin, Mayo Clinic.
- Color composite EELS composition map from data acquired using a GIF Quantum®ERS system on a 300 kV probe corrected STEM with 1.0 nA beam current. The EELS data was acquired at 4.1 ms/pixel with a 20 mR convergence angle and 42 mR collection angle. The 200 x 200 pixel map took under 3 minutes to acquire (164 s). The black areas are SI, which has been omitted for clarity. TEM facilities courtesy FELMI and TU Graz, Austria.

Bottom Images, left to right:

- (Left) Colorized elemental map based on Pt M-edge (red), Fe L-edge (green), and O K-edge (blue) intensities. Data captured using a Gatan GIF Quantum®ERS and 300 kV probe corrected STEM with 180 pA beam and 5 ms exposure. (Right) Extracted Pt $M_{4,5}$ edges (upper) and Fe $L_{2,3}$ edges (lower) from the thin outer shell (green), low density inner shell (red) and core (blue). Despite the sub-nm proximity of the outer shell to the core, no Pt is detected. The Fe-L2/L3 ratio and peak position vary significantly with the Fe chemistry of the layer. Sample and TEM facilities courtesy McMaster University, Canada.
- Colorized 1k x 1k elemental map of $LaMnO_3$ / $SrMnO_3$ superlattices grown on $SrTiO_3$ (Mn - Red, La-green, Ti L-blue). Data was acquired on an Enfinium™ (UHV special) coupled to a 100 kV NION UltraSTEM. Image courtesy Mundy, Adamo, Schlom & Muller, Cornell University. (Results published in Monkman & Adamo, et al, Nature Materials, vol 11, 2012).

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