

Amit Kumar
Academic Non-Clinical
School of Mathematics and Physics
Centre for Nanostructured Media
UOA9 - Physics
E-mail: a.kumar@qub.ac.uk
Phone: +44 (0)28 9097 3364



Research Interests

Ferroelectrics, Scanning Probe Microscopy, Local electrochemistry in Batteries & Fuel cells, Nonlinear Optics

Research Output

Fundamental aspects of conduction in charged ErMnO_3 domain walls

McCartan, J., Turner, P. W., McConville, J. P. V., Holsgrave, K., Cochard, C., Kumar, A., McQuaid, R. G. P., Meier, D. & Gregg, J. M., 22 Apr 2024, (Early online date) In: Advanced Electronic Materials. 8 p., 2400091.

Spatially resolved high voltage Kelvin probe force microscopy: a novel avenue for examining electrical phenomena at nanoscale

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Ferroelectric domain wall p-n junctions

Maguire, J. R., McCluskey, C. J., Holsgrave, K. M., Suna, A., Kumar, A., McQuaid, R. G. P. & Gregg, J. M., 22 Nov 2023, In: Nano Letters. 23, 22, p. 10360–10366 7 p.

Unravelling spatio-temporal transient dynamics at nanoscale via wavelet transform-based Kelvin probe force microscopy

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High resolution spatial mapping of the electrocaloric effect in a multilayer ceramic capacitor using scanning thermal microscopy

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Conducting ferroelectric domain walls emulating aspects of neurological behavior

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