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13th May 2013

To whom it may concern,

NPL, through the Functional Materials Group would like to support the application of Dr Neil Mathur for his EPSRC “Capital for Great Technologies” application on the acquisition of a low-temperature Scanning Probe Microscope (SPM). NPL has a long standing relationship with Cambridge University which has led to a number of fruitful collaborations in a variety of fields. In the Functional Materials Group, we aim to support our collaborators with measurements of magnetoelectric and electrocaloric material properties and maintain our competitive advantage through involvement in collaborations on research projects which shows promise for future “green energy” applications.

Magnetoelectric and electrocaloric materials form the core of the team’s interests, and this synergises well with the research proposed by Dr. Mathur in imaging low-temperature phase transitions of electrocalorics and electrically driven magnetic changes in magnetoelectrics near phase transitions away from room temperature.

In return, we would gain from working together to improve the quantification and traceability of magnetoelectric and electrocaloric measurement through cross-comparison. In particular, our team is leading a collaborative EMRP project which aims to develop traceable metrology for direct measurement of electrocaloric effect and nanoscale modelling. The research proposed by Dr Mathur based on low-temperature SPM, will complement our work by the application of NPL’s analysis to Cambridge SPM results to provide reliable nanoscale electrocaloric measurements.

The Functional Materials team has a comprehensive research portfolio utilising a wide-range of experimental and theoretical techniques to investigate material properties, device performance and new application concepts. Our research portfolio is based on extensive peer reviewed publications, spanning over 15 years of activity in this field, to confidential industrial reports, measurement good practice guides, standards, instrumentation and software, and as such we feel confident we can support Dr. Neil Mathur both with our previous experience and practically in his research.

I hope that Dr. Mathur’s application will meet with your support. I wish him every success and look forward to working with him in the future.

Yours Sincerely,



Tatiana Correia
Higher Research Scientist
Functional Materials