Professor Tim Button

Professor of Functional Materials and Devices

School of Metallurgy and Materials (/schools/metallurgy-materials/index.aspx)

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University of Birmingham
Edgbaston
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Qualifications

PhD in Materials Science & Technology, Bradford, 1983
BTech in Materials Science & Technology, Bradford, 1978

Research

Research Interests Include:

- Microstructural and property development in functional ceramics
- Fabrication and processing techniques for ceramic materials
- Influence of processing on the properties and performance of functional materials
- Application of high temperature superconductor materials
- Fabrication of ceramic components to "net shape"
- Novel piezoelectric sensor and actuator devices
- High Frequency ultrasonic transducers
- Co-processing of multi-phase ceramic systems and components

Current Sponsored Research Projects:

- Ultrasonic arrays for ultrahigh resolution real time biomedical imaging (EPSRC)
- Novel Dielectric Resonator Structures and Metamaterials (EPSRC)
- Smart X-ray Optics (EPSRC Basic Technologies, www.SmartXrayOptics.org)
- Preparation and characterization of sodium transition metal oxides as thermoelectric materials (University)
- Colloidal Processing of net shape ceramics and intermetallics (Portuguese Government)
- Synthesis and Fabrication of Nanostructured Ceramics for Device Applications (ORS)
- Oxide thin films for tuneable microwave devices (Royal Society)
- Multilayer Coated Conductors (EPSRC/Coated Conductor Consultancy).
- Fabrication Routes for Fine-Scale Piezoelectric Devices. (EPSRC)
- Passive materials for use in high frequency ultrasonic transducers. (EPSRC)

Other activities

Managing Director of Applied Functional Materials Ltd (**www.afm-ltd.com (http://www.afm-ltd.com/)**), University spin-out company.

Publications

RAE Publications:

TC Shields, K Kawano, TW Button and JS Abell. 2002. Spray pyrolysis of epitaxial YBCO films on (100) single crystal SrTiO3 substrates. Superconductor Science and Technology, 15, 99-103.

DH Pearce, A Hooley and TW Button. 2002. On piezoelectric super-helix actuators. Sensors and Actuators A, 100, (2-3) 281-286.

B Su and TW Button. 2004. Microstructure and dielectric properties of Mg-doped barium strontium titanate ceramics. Journal of Applied Physics 95 (3): 1382-1385.

BL Cheng, TW Button, M Gabbay, G Fantozzi and M Maglione. 2005. Oxygen vacancy relaxation and domain wall hysteresis motion in Cobalt doped barium titanate ceramics. Journal of the American Ceramics Society, 88 (4) 907-911.