# MASSIVE Newsletter

**Manufacture of Safe and Sustainable Volatile Element Functional Materials**

**Issue 3 | October 2015**

## New researchers join MASSIVE

With the main Manufacturing Capability Projects well underway at our four partner universities, we are pleased to welcome the following new members to the MASSIVE team: Dr Oleksandra Ieromina (Cranfield) evaluating the environmental risks associated with manufacturing processes using both existing and replacement lead-free materials; Dr Amit Mahajan (QMUL) focusing on the relationship between composition and processing of lead-free ferroelectrics/dielectrics; Rebecca Townsend (Surrey) developing ink-jet printing processes; Dursun Ekren (Manchester) PhD student.

## Manchester labs on the move

MASSIVE researchers in the Electroceramics Group at Manchester's School of Materials have had a busy summer relocating their laboratory 1km across campus to a new facility on the north eastern corner of the site close to Piccadilly Station. This is a preliminary process as part of the £350 million Manchester Engineering Campus Development which will be built on the site of the old Materials Science Centre and adjoining halls of residence. The move has involved over 150 staff and students and equipment ranging in size from rolling mills and electron microscopes to hotplates and was phased over the period June to September, allowing work on processing and characterisation of thermoelectric materials to carry on largely to plan throughout the move, despite the "massive" upheaval. Good luck with the unpacking and re-installation!

## EPSRC MagMat project at QMUL

QMUL's Materials Research Institute is leading the new EPSRC-funded 'MagMat' project which will set up a unique UK facility to explore materials synthesis and processing in strong magnetic fields with potential applications in the fields of advanced materials, energy and its storage, synthetic biology and regenerative medicine. Magneto related phenomena such as texturing and self-assembly have special relevance to functional materials and biosciences, where the engineering outcomes are often a result of multifunctional couplings. Running from February 2015 to January 2020, MagMat will initially involve 14 research groups from 7 universities with the expectation of further widening the collaboration in future, including identifying projects aligned with MASSIVE. Contact: Prof Mike Reece **m.j.reece@qmul.ac.uk**, MagMat principal investigator.

## Launch of the MASSIVE industrial collaboration programme

We are pleased to announce the start (October 2015) of the first of the MASSIVE short-term Feasibility Studies. Researchers at Surrey are working with Knowles, one of the project consortium's industry partners, to undertake knowledge transfer related to printing of functional materials. Part of our programme of engagement with manufacturers and end users of functional materials across a range of sectors, these Feasibility Studies are conducted in collaboration with industry (with co-funding from MASSIVE) to enable exploration of novel manufacturing concepts and evaluation of their potential to lead to longer-term strategic Industry Development Projects within MASSIVE.

## Innovate UK project 'ENHANCED'

In a new collaboration with MASSIVE consortium member European Thermodynamics Ltd, Surrey has recently started work on the Innovate UK-funded project ENHANCED (ENergy HArvester for AutoNomous Commercial Electronic Devices) on printing of functional materials. Developments with the project can be followed at **enhanceduk.com**.

## Sustainable Functional Materials (SFM2016) Conference

The inaugural SFM2016 conference, to be held in Scarborough in April 2016, is being organised jointly by EPSRC projects 'Substitution and Sustainability in Functional Materials and Devices (SUBST)', led by Prof Ian Reaney at the University of Sheffield, and MASSIVE. The meeting will cover scientific and technological aspects of maintaining a sustainable, environmentally friendly and economically viable Functional Materials and Device industry. Topics will include thermoelectrics, fuels cells, solar cells and dielectrics, with a particular focus on gaining an industry perspective on the critical sustainability and substitution issues expected to come to the fore over the next 5-10 years. Further information can be found at **sheffield.ac.uk/materials/news/sfm2016-1.458694**.

### Key Project Dates

**MASSIVE Industrial Advisory Board Networking Event**
10 February 2016
Queen Mary University of London
Contact **l.boniface@surrey.ac.uk** for further details.

### Conferences

**Piezoelectric Thick-Films**
13 November 2015
Institute of Physics, London
IOP Technical Meeting.
**Registration** required.

**Sustainable Functional Materials 2016 (SFM2016)**
5-6 April 2016, Scarborough
Co-organised by EPSRC projects SUBST and MASSIVE.

### Collaborate with MASSIVE

The MASSIVE project team is continually looking to grow its **industrial engagement** through maintaining an active industrial advisory board, expanding its industrial partner base and developing new collaborative projects. Please contact us if you or your colleagues are interested in pursuing these opportunities.

### Contact Us

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