

# MASSIVE Newsletter

MAnufacture of Safe and Sustainable Volatile Element functional materials

June 2014



## Official MASSIVE start

The 31<sup>st</sup> of March 2014 saw the official kick-off of the MASSIVE project. Since the announcement of the funding award at the end of 2014 the senior management team have been working to clearly define the activities and recruiting post-doctoral researchers and PhD students.

**The senior management** team are Professors Robert Dorey, Bob Freer and Mike Reece and Dr Sophie Rocks at Surrey, Manchester, QMUL and Cranfield, respectively.

In the first year of the project we have defined a set of common materials (SrTiO<sub>3</sub>, ZnO and silicates) to allow common manufacturing and characterisation protocols to be established across the academic partners in order to facilitate comparison of results and to explore the limits of

manufacturing capabilities when dealing with different types of materials. In parallel the teams will continue to explore the manufacture of a range of piezoelectric, thermoelectric and conducting materials.

## Growth of Surrey's film manufacturing capability

The summer of 2014 will see the refurbishment of Surrey's film manufacturing facility to better handle the demands of the MASSIVE project. The university investment will see film processing capabilities extended to allow manufacturing of functional thick films over larger areas. Work is expected to be complete in August ready for the new intake of PhD students.

## Student project highlights



Two MEng students at the University of Surrey recently completed their final projects in the area of functional materials and energy harvesting. Taking thermoelectric and piezoelectric materials one projects was concerned with developing a portable emergency charger powered by a simple T-light candle (see picture), while the other projects looked at self-healing of piezoelectric energy harvesters using reconfigurable piezoelectric thick film patches. The work has revealed a number of challenges

that could be aided by the outputs of the MASSIVE project.

## Engaging with the industrial community

The MASSIVE team is continually looking to grow its industrial engagement by maintaining an active industrial advisory board, growing its industrial partner base and developing new collaborative projects. If you, or one of your colleagues, would be interested in pursuing any of these opportunities please contact the project lead Professor Robert Dorey at [r.dorey@surrey.ac.uk](mailto:r.dorey@surrey.ac.uk) or 01483 689608.

### Key dates

18 September 2014

**MASSIVE networking event**  
University of Surrey,  
Guildford

### Upcoming conferences

24-26 September 2014

**12th European Conference  
on Thermoelectrics**  
Madrid, Spain.

26-28 January 2015

**Piezo 2015- Piezoelectric  
for end users**  
Maribor, Slovenia.

21-25 June 2015

**European ceramics society  
conference, ECerS XIV**  
Toledo, Spain

### Funding calls

TSB Energy Harvesting for  
Autonomous Electronics  
Deadline: 25 Sept 2014

Internal funding calls for  
MASSIVE collaborative  
feasibility projects will open  
at the end of 2014.