

## Centre for Advanced Structural Ceramics

UK centre for structural ceramics research and teaching, which aims to be world-leading and to develop links and collaborations with industrial and academic groups world-wide.

### CASC Newsletter – March 2014

Updating the ceramics community on CASC news and progress

The CASC continues its activities supported by the Industrial Consortium formed with Morgan Ceramics, Rolls Royce and DSTL as founding members after the end of the original EPSRC grant. More than 30 students and postdoctoral researchers working on projects funded by a variety of sources including EPSRC, EU and industry. CASC also organizes different activities to promote scientific dissemination and ceramics education such as a Summer School on Ceramics, lectures, specialized workshops and industry days and the Richard Brook Prize for the best PhD thesis on ceramics in the UK.



**FOURTH CASC INDUSTRY DAY** was held on 17<sup>th</sup> January 2014 at Imperial College with attendants from industry (Morgan Technical ceramics, Morgan Advanced Ceramics, Rolls-Royce, Ceram Tec, Dynamic Ceramic, Advanced Defence Materials Ltd., Office of Naval Research Global, UK, Atomic Weapons Establishment) and university (Imperial, Queen Mary, Missouri University of Science and Technology). There were presentations and discussions between industrial and academic members and displayed research posters. The industry day was followed with the Steering Group meeting in the afternoon. The next CASC industry day will be on 23 January 2015. For more information about the benefits of membership of

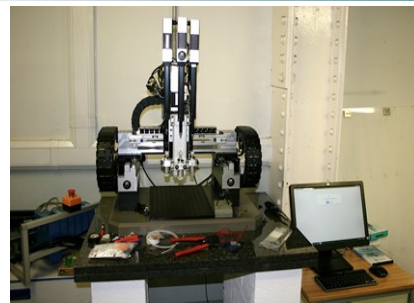
the CASC-Industry Consortium, please contact Eduardo Saiz ([e.saiz@imperial.ac.uk](mailto:e.saiz@imperial.ac.uk)) or Amutha Devaraj ([adevaraj@imperial.ac.uk](mailto:adevaraj@imperial.ac.uk))

**Dr HUIXING ZHANG** is receiving Sir Richard Brook Prize for 2013 best ceramics PhD thesis in the UK sponsored by Morgan Ceramics. This was for her research on *Microstructural Evolution and Oxidation Behaviour of Spark Plasma Sintered MAX Ceramics*, supervised by Professor Ping Xiao at University of Manchester. Mike Murray, Morgan Ceramics is giving this award in Materials Exchange event held at the Ricoh Arena, Coventry and it covers a certificate, plaque and £1000 cheque. The next year prize will be awarded in January 2014. For additional information, please contact Eduardo Saiz ([e.saiz@imperial.ac.uk](mailto:e.saiz@imperial.ac.uk)) or Amutha Devaraj ([adevaraj@imperial.ac.uk](mailto:adevaraj@imperial.ac.uk))



### 3D PRINTER

A robotic assisted deposition system from 3D Inks (USA) has been installed recently in the CASC. The system can print 3D structures using continuous extrusion, with submicron reach submicron-printing precision. The printer allows the combination of three different inks to fabricate multiphase structures.



### CASC NEW APPOINTEES

**Dr VICTORIA Garcia-Rocha** joined CASC in December 2013, after work focused on developing improved materials for energy storage devices in the Centre for Sustainable Chemical Technologies at the University of Bath. She had been previously working as a postdoc at ITMA Materials Technology in Spain where she worked on the sol-gel synthesis, processing and sintering of a wide variety of ceramic nanoparticles and on the fabrication of advanced ceramic-carbon composites by spark plasma sintering. She is a Chemical Engineer and completed her PhD in 2008 at the University of Oviedo in Spain. Her research at CASC is focused on the development of graphene enhanced photocatalysts and graphene-ceramic composites.



**Dr NA NI** has been awarded as an Imperial College Junior Research Fellowship (JRF) for 36 months for her study entitled "Understanding Interfaces in Solid Oxide Fuel Cells" under the sponsorship of Dr Stephen Skinner at Imperial College London.

**Dr MIRIAM Miranda Fernandez** joined element six as the senior scientist after completing her Marie curie fellowship in the CASC in February 2014.

**OUT AND ABOUT** : Over the summer CASC researchers have presented their work at a number of international conferences.

- *TMS - Liquid Metal Processing & Casting Conference 2013 (LMPC 2013) September 22-25, 2013 Austin, Texas*
- *Euromat – European Congress and Exhibition on Advanced Materials and Processes September 8-13 2013 Sevilla.*
- *8<sup>th</sup> International conference on High Temperature Ceramic Matrix Composites – September 2013.*
- *MS&T'13: Materials Science & Technology 2013 October 27-31, 2013 held at Montreal, Quebec Canada*
- *International Workshop on the Mechanical Behavior of Nanoscale Multilayers, October 1-4, 2013 Madrid, Spain*
- *BioBone workshop on "Mechanical characterization of ceramic-based materials at different scales" 6-8 November, Lyon*

### PRIZES AND MEDIA MENTIONS



**Dr Esther Garcia-Tunon** (PDRA) was runner up for the *Best Oral Presentation* prize at the Department of Materials Postdoctoral Staff Research Symposium on 29 January 2014. The runner-up prize, sponsored by CSI, was valued at £50.

**Eleonora D' Elia** (PhD student) won a prize for *Best Poster Presentation* at the Department of Materials Postdoctoral Staff Research Symposium on 29 January 2014. The prize, sponsored by CSI, was valued at £100.



**SUMMER SCHOOL** Following the success of the first three Summer Schools, this annual event directed towards ceramic engineers and researchers, working in universities or industries those who wish to enhance their ceramics background or keep abreast of the more recent developments. The fourth ceramic summer school was held during 18 -20<sup>th</sup> September 2013 at Royal School of Mines, Imperial College London. Presenters at the fourth CASC Summer School 2013 were: Dr Tim Van Gestel (Forschungszentrum Jülich, Germany) Prof Jozef Vleugels (K.U.Leuven, Belgium) Dr Jon Molina (IMDEA, Spain) Prof Eduardo Saiz (CASC, Imperial College, UK) Dr Severin Hofmann (DLR, Germany) Prof John Fernie (AWE, UK). The information about the next summer school date will be soon posted here: <http://www3.imperial.ac.uk/structuralceramics/summerschool>