

## **BSSM Annual Conference on Advances in Experimental Mechanics**

This year's conference marked the 40<sup>th</sup> anniversary of BSSM and was attended by around 70 delegates from Europe, US, Japan and India. The conference took place at the Novotel in York from 6<sup>th</sup> to 8<sup>th</sup> September. The annual EMex exhibition ran alongside the conference with exhibitors covering a wide range of activities. The participants were: HBM Ltd., Vishay Measurements Group, LIMESS GmbH, Straininstall UK, VisEng Ltd., Lambda Photometrics, Fylde Electronics, John Wiley and Sons and Technimeasure. The conference was co-sponsored by IOP Stress and Vibrations Group, IMechE Structural Technology Group, EIS, SEM, JSEM, and CSEM.

The technical programme included two keynote speeches one from Dr Steve Haake from the University of Sheffield on "Sports Engineering Past and Present". Steve provided an overview of the range of issues involved in the analysis of both sports equipment and competitors. The second keynote speech was by Professor Takashi Yokoyama on "Impact tensile properties of adhesive and welded butt joints". Takashi provided a detailed description of the consideration to be made in testing joints at high strain rates together with a comprehensive account of the analysis and interpretation of results from the tests. The measurements lecture this year was Professor Tom Hyde from the University of Nottingham. Tom's presentation covered work carried out by himself and colleagues at Nottingham on "High temperature Behaviour of Materials and Components under Creep Conditions". The presentation provided an excellent review of the status of the work and an invaluable data source for those working in the field. Along with these presentations to mark the 40<sup>th</sup> Anniversary Emeritus Professor Peter Stanley from the University of Manchester gave an entertaining account of the "40 years of Strain".

The conference session covered a host of activities from Noise and Vibration to Optical techniques for Stress Analysis. All of the presenters had worked extremely hard to produce topical and stimulating presentations. It was particularly interesting to see the range of applications that the strain gauges are used in from models of blood vessel behaviour to large concrete pressure vessels used in the nuclear industry. It is clear that photoelasticity has an important role to play in experimental mechanics and interesting to observe the increasing use of other full field optical techniques such as electronic speckle pattern interferometry. The high quality of the contribution of student authors was marked by the Young Stress Analyst award. The first prize went to Mr Stephen Boyd from the University of Southampton for his presentation on "Fatigue life and residual strength analysis of steel-composite joints. The second prize was awarded to Mr Ben Grisso of Virginia Polytechnic Institute for his presentation on "Detecting damage in graphite/epoxy composites using impedance-based structural health monitoring". The third prize was awarded to Mr Alan MacBeath of the University of Glasgow for his paper on "Ultrasonic cutting with high gain blades". The Young Stress Analyst award is sponsored by Airbus UK who provide cash prizes for the top three papers. Each prize winner also receives a years free membership of BSSM.

There are 36 papers in the printed proceedings, which were published by Trans Tech. The papers are available in downloadable form at [www.sceintific.net](http://www.sceintific.net). Proceedings of this nature are a new innovation and require that two experts in the area reviewed each paper. The high quality of the proceedings is due to the hard work of the technical committee and in particular the conference chairman Dr Margaret Lucas from the University of Glasgow, who edited the proceedings. Additional copies of the proceedings can be purchased from the BSSM contact [sallycryer@bssm.org](mailto:sallycryer@bssm.org).

The 4<sup>th</sup> conference in the series will take place at the University of Southampton and promises to follow in the tradition of the past three conferences. The conference is sponsored by IOP Stress and Vibrations Group, IMechE Structural Technology Group, EIS, SEM, JSEM, and CSEM. With new involvement from the French AFM Society. Airbus UK and Instron are providing sponsorship for a number of events that will take place at the conference. The BSSM Measurements Lecture by Professor Rod Smith, Imperial College on "Knowledge of Service Loads-The Key to Structural Integrity". The keynote speakers will be Professor Bob Cripps, Royal National Lifeboat Institution, on "Design and Development of Lifeboats-Damage Evaluation and Repair of Composite Structures" and Professor Michel Grediac, Blaise Pascal University, France, on "Stress Analysis and Identification with Full-Field Methods". There are a number of social events planned such as a boat trip and reception on Southampton Water and a Gala dinner. If you require further information on the conference please contact the conference chairman Dr Janice Barton ([Janice@ship.soton.ac.uk](mailto:Janice@ship.soton.ac.uk)), Dr Simon Quinn ([sq1@soton.ac.uk](mailto:sq1@soton.ac.uk)) or Ms Sally Cryer the conference secretariat ([sallycryer@bssm.org](mailto:sallycryer@bssm.org)). Alternatively visit the web site [www.bssm.org/conference.asp](http://www.bssm.org/conference.asp).