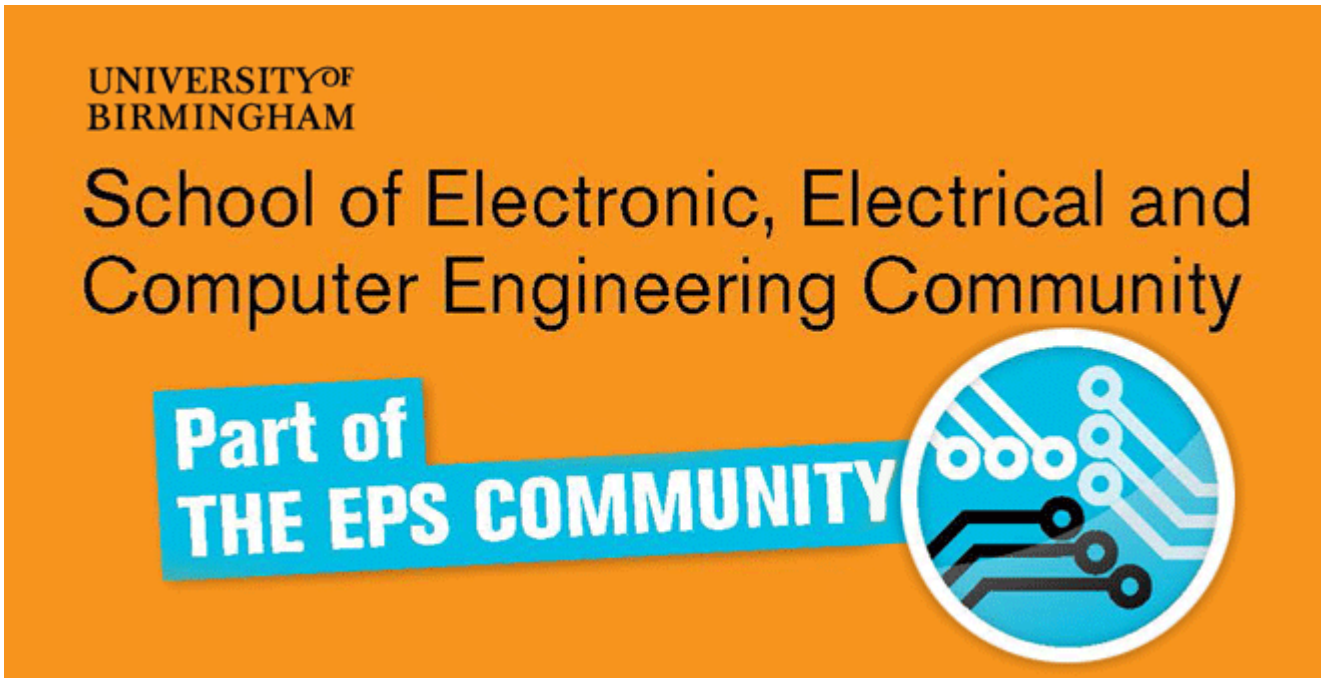

Summer 2013

Greetings

The School of Electronic, Electrical and Computer Engineering continues to develop as a centre for international research and teaching, despite the challenges that the current financial climate and immigration regulations present to us. Our biggest challenge is to attract UK students to study engineering at University. This seems to be a National trend – the UK Electronic Skills Foundation, for example, identified a 46% drop in applications to electronic and electrical engineering degrees between 2006 and 2012. In contrast with this decrease in applications, we see a big up-turn in the employment prospects of our graduates. Last year, our graduate employability rose to 94%. So it seems as if potential students do not realise the tremendous potential for getting jobs in a thriving engineering market – and this is one of the main messages we're giving through our various Out-Reach and school engagement activities. It's a message that our Alumni could also spread for us because it bears repeating as often as possible. You'll recognise this yourself if you've tried to recruit well-qualified graduate engineers in the past couple of years.

We continue to attract students from around the World and have partnership agreements with Universities in China and Malaysia, to give but two examples. We've spent a lot of time and effort working on ways to integrate these international students, who typically join us in the 2nd or 3rd years, with the students progressing from the 1st year. We send around a dozen of our students to China for 2 weeks in the summer. They spend time at two of our partner Universities, meeting the new students and making friends with them, sharing our approach to running laboratory classes and gaining new experiences of life in China. Then all of our 2nd year students travel to the University's centre in the Lake District for a few days of team-working (usually in the middle of a cold and miserable British November). Everybody seems to enjoy both of these activities and they certainly help bring students together.

Our research activities flourish across a wide range of disciplines. We're particularly proud of the relationship we've built up across rail industries in the UK and around the World and this spins out into our research activity and teaching. A team of our students entered the world's first hydrogen-powered train in a national engineering competition, to great acclaim, and we're working on several projects related to electric vehicles (which will lead to the introduction a new MSc programme in collaboration with Nottingham University next year). Our RF and Microwave work continues to be internationally leading in military and automotive applications, leading to some major developments in terrain mapping techniques. Our computer engineering work is benefitting military training and addressing a

In this issue...

Have you joined the School LinkedIn Community yet?

An online community for alumni, students, faculty and friends from the School of Electronic, Electrical and Computer Engineering, the LinkedIn group provides you the opportunity to engage in conversation, find former colleagues, keep up to date with changes in the School and debate with academics.

Join this growing community today.

range of problems relating to rehabilitation, both in terms of recovering from trauma and in relearning everyday skills. This latter work is leading to the development of a new research group exploring Medical Sensors and Healthcare Technologies.

This gives a flavour of where the School of Electronic, Electrical and Computer Engineering finds itself today. I expect that some of this might chime with your memories of the School and much of it might be new. I hope that it gives you a sense of how the School is adapting to changing times. I also hope that you'll share your memories of your time at Birmingham with us at our annual Alumni reunion events and look forward to meeting you.

With best wishes,

Professor Chris Baber
Head of School
Electronic, Electrical and Computer Engineering

News from the School of Electronic, Electrical and Computer Engineering

Congratulations to all our recent graduates

Congratulations to everyone who graduated this summer and welcome to the alumni community! Graduations this year fell at the beginning of the heat wave and graduands enjoyed a beautiful summer's day to shake hands with Sir Dominic Cadbury and receive their degree certifications. **To read more and see photographs of the day click here.**

Virtual world to help relieve patients' pain

Researchers in Birmingham are hoping to use the hi-tech world of virtual reality in a bid to relieve the pain of hospital patients. Staff at the Queen Elizabeth Hospital Birmingham (QEHB) and the University of Birmingham are working on using computer game technology to alleviate patients' pain and discomfort through distraction therapy. **Read more.**

Putting the smart into smart phones

There are some people who would have you believe that smart phones are all about design and aesthetics, that these are all about beautiful packaging and stunning graphics. We in the School of Electronic, Electrical and Computer Engineering (EECE) would beg to differ. Imagine taking any smart phone and prising the back off. Once you get over the shock of realising that you've voided your warranty, you'll see the battery and SIM card holder sitting on top of monolithic microwave integrated circuits (MMICs). Then remember that this is what EECE does. I don't mean that we simply make circuits (although this is something we make our students do from their first year) but that we work on all aspects of what makes the 'smart phone' smart. **Read more.**

A class act: empathetic robot tutors in classrooms to facilitate teaching and learning

A European project to develop robotic tutors that will support teachers and motivate students in secondary schools is being led by University of Birmingham engineers and computer scientists, in collaboration with Heriot-Watt University and other European partners. Significant work has been devoted to the design of artificial tutors with human capabilities with the aim of helping increase the efficiency achieved with a human instructor. **To read this story in full click here, alternatively read our feature in The Times.**

New realities enhance historical and medical studies

Staff and students from the School of EECE have been conducting investigations of field-based Augmented Reality in Devon recently where they recreated the experience of a World War II Spitfire preparing for taxiing within the remains of a dispersal pen at the long-abandoned RAF airfield of Harrowbeer, near Yelverton. One of the many aims of this project is to encourage individuals and groups from all walks of life to venture out and experience the benefits the real natural world has to offer. **Read more.**

Solar superstorms: UK must brace itself, say engineers

Particles and radiation from a superstorm could lead to blackouts and put one in 10 satellites out of action. The government must develop a national strategy to cope with the effects of solar superstorms on electricity and communications, according to a study by the Royal Academy of Engineering. **To read the full story and learn how the EECE is involved click here.**

The HIT Team's star recruit

Lt Roxane Heaton's day job is Synthetic Training Lead in a Royal Navy Technology Based Training Unit. In layman's terms, Roxane provides advice and consultancy on emerging synthetic technologies across the Royal Navy (including the Royal Marines). This means acting as a principal consultant for the research and development of technology-based training solutions in order to meet the requirements of the versatile maritime force which is the Royal Navy. She has recently joined EEC's HIT Team to researching synthetic training options for the Royal Navy. **Read her story here.**

How can children interested in science and technology find their way towards degrees and careers in Engineering?

Circles of influence

The University of Birmingham Circles of Influence campaign, via charitable donations from our alumni, is funding a project in the School of Electronic, Electrical and Computer Engineering to encourage more school children to become interested in science and technology as a career option. Without the generosity of University of Birmingham alumni, professional-quality filming and editing to the desired timetable would not have been possible. **Read more.**

New staff in 2013

There have been a number of appointments in the School this year. **Read a summary of our new staff and their research interests online here.**

We would love to hear from you

Everyone has a story to tell and we would love to hear yours. What have you been up to since leaving the School of Electronic, Electrical and Computer Engineering? Have you had any successes or challenges that you would like to share with fellow graduates? Do you have any particular words of wisdom you would like to pass on to graduating students?

Your stories help us to promote your School, communicate with prospective students and complete the history of this institution. Please fill in the **online form** or email us at **eps-community@contacts.bham.ac.uk**, we would love to hear from you.

Your School needs you...

Would you be able to share some of your time, expertise or connections to help Electronic, Electrical and Computer Engineering to succeed? There are many ways in which you can give a little back, from providing a career profile, to mentoring a student. **Details can be found online and email us if you would like to get involved.**

Events taking place shortly...

Undergraduate Open Day

14/09 and 26/10/2013

Encourage students you know to visit the School of Electronic, Electrical and Computer Engineering, meet our staff and students and learn about our degrees.

Do we have the right details for you?

According to our records your current business details are as follows: Position at Organisation Name If this is not correct, please visit your.bham or email alumnioffice@contacts.bham.ac.uk.