Future Devices & Technologies SIG

'How can rapid prototyping impact sustainability?'

12th September 2023

The Future Devices & Technologies SIG is championed by **Graham Anderson** of **Beko, Nadia Aziz** of **Unbounded Future, Zahid Ghadialy** of **3G4G, David Roberts** of **Jabooh Software, Charles Sturman of** TechWorks

Venue: Homerton College, Hills Road, Cambridge CB2 8PH

AGENDA

13:15	**Registration, networking and opportunity to view demos**
14:00	**Welcome by Paul Crane, CEO, CW (Cambridge Wireless)**
14:05	**Introduction to the topic and presentation on 'Rapid prototyping for early customer validation'** **from Future Devices & Technologies SIG Champion and event sponsor, Graham Anderson, Team Leader – UK R & D, Beko**
14:25	**Session to be chaired by Charles Sturman, Future Devices & Technologies SIG Champion** **'The carbon footprint of electricals at end-of-life: the UK WEEE system'** **Matt Bond, Carbon Consultant at Small World Consulting, presenting on behalf of REPIC Ltd** When electrical products are disposed of in the UK WEEE system, how beneficial is the recycling from a carbon perspective? What is the impact of landfill or energy-from-waste incineration? What impact does transportation distance have on the carbon footprint? And how could the carbon footprint of the end-of-life management be improved. This talk addresses these questions and their implications for electricals producers based on a life cycle assessment undertaken for REPIC, the UK's largest WEEE producer compliance scheme.
14:45	**Q & A**
14:50	**'Rapid prototyping: the key to creating more sustainable products'** **Richard Anthony, Senior Application Engineer - Northern Europe, Protolabs** In this talk digital manufacturing experts, Protolabs, will discuss how 3D printing, CNC machining and injection moulding can be used to create more sustainable prototypes. Analysing the pros and cons for each service line, Protolabs will explore 3 key considerations: material usage, geometry, and choosing the right supplier.
15:10	**Q & A**
15:15	**'Plastic recycling past, present and future'** **Helen Jordan, Sustainability Manager, British Plastics Federation** This presentation will look back at the how the plastic recycling has developed over the last 30 years. It will discuss what needs to happen now to enable plastic recycling to continue to develop and focus on what could be achieved by 2030.
15:35	**Q & A**
15:40	**Refreshment break, networking and opportunity to view demos**
16:10	**Session to be chaired by Zahid Ghadialy, Future Devices & Technologies SIG Champion** **'From zero to on-field deployment with little money and little time'** **Tashiv Ramsander, CTO & Founder, Eyesea Green** This talk discusses the utilisation of methods for rapid development and manufacturing to bring energy optimisation products from market need to idea conception to product testing and finally to on-field deployment with little time and money. Eyesea Green has developed a range of energy management devices in response to the recent energy crisis and net-zero policies using various rapid-prototyping and manufacturing methods for both physical devices and software-as-a-service applications(SaaS).
16:30	**Q & A**

16:35	**'Ideas to products – the step in the middle'** **Sami Gabriel, Distinguished Engineer, Vodafone Group** Sami will talk about the way that small scale rapid prototyping can give quick feedback on ideas and direct the focus of further development and the role of 3D prototyping tools, the materials supply chain and funding.
16:55	**Q & A**
17:00	**Panel session to be chaired by Zahid Ghadialy, Future Devices & Technologies SIG Champion**
17:25	**Wrap-up**
17:30	**Event close followed by drinks reception prior to CW Founder Members' Dinner**

Profile of organisers

Cambridge Wireless (CW)
CW is the leading international community for companies involved in the research, development and application of wireless and mobile, internet, semiconductor and software technologies. With over 400 members from major network operators and device manufacturers to innovative start-ups and universities, CW stimulates debate and collaboration, harnesses and shares knowledge, and helps to build connections between academia and industry. CW's 20 Special Interest Groups (SIGs) provide its members with a dynamic forum where they can network with their peers, track the latest technology trends and business developments and position their organisations in key market sectors. CW also organises major conferences and start-up competitions along with other high-quality industry networking events and dinners. With headquarters at the heart of Cambridge, UK, CW partners with other international industry clusters and organisations to extend its reach and remain at the forefront of global developments and business opportunities. **www.cambridgewireless.co.uk**

Profile of host

Homerton College
Homerton College is rooted in non-conformity from its earliest origins in the capital city in 1695. It has always challenged received traditions, adapting them to successive social and cultural change. A 'dissenting academy' in the early modern age, it trained clergy to spread a new gospel at home and abroad. In the industrial age it educated men and women for teaching children nationwide, in 1894 founding a new college in Cambridge for this purpose. Over the last 125 years, Homerton worked ever more closely with Cambridge University before receiving its Royal Charter in 2010, as one of the university's largest colleges. It now prepares students for all Tripos Subjects and its Fellows research across all Faculties of the university. It remains as committed as ever to inspiring and supporting its graduates in contributing to society and making positive change. **www.homerton.ac.uk**

Profile of sponsor

Beko
Beko, one of the leading home appliance brands in the UK, has been operating in the UK and Ireland since 1990 and have sold over 30 million appliances in the UK. In 2015 Beko plc's parent company, Arçelik, opened its first Research & Development centre in the UK. The centre focusses on areas that will contribute to the development of innovative products in the field of white goods, with sustainability amongst our primary targets. Arçelik was recently named as the highest scoring household durables company in the Dow Jones Sustainability Indices. In order to keep improving the sustainability of our products we have an Innovation department turning ideas into reality via cutting-edge technologies. Rapid prototyping give us the chance of early validation with our consumers. We use it to make our concepts tangible and test them with our consumers. It makes it possible for us to decide which concept to champion, so we will not invest into the wrong ideas. By using rapid and digital prototyping as an everyday tool we are able to execute entrepreneurship and Innovation programmes, such as hackathons, with concrete outputs including venture projects and investment. **www.beko.co.uk**

Profile of SIG Champions

Graham Anderson, Beko @Beko
Graham Anderson is Senior Specialist at Beko R&D, with research interests focused around novel sensors, data analytics, and energy storage/harvesting. Previously he worked as a Senior Scientist at Cambridge Display Technology working on the development of ink jet printed OLED displays and organic thermoelectric generators. Graham has a PhD from Leeds University in spintronics. **www.beko.co.uk**

Nadia Aziz, Unbounded Future @NadiaAzizTweet
Nadia is an emerging technology consultant with heavy focus on AR/VR & new technology areas. She has a broad experience over 12 years as an engineer, programmer, consultant, advisor, speaker, IP scouting and has a passion for emerging technologies and its impact on business transformation. She has also helped in mergers & acquisition programmes in France specifically in the engineering areas. Nadia Aziz was recently an Innovation leader for Emerging Technologies at NTT DATA where she led the development of innovation applications in Augmented (AR) & Virtual Reality (VR)technologies, AI, sensors and wearables. She is active in the Digital Health community and was a co-producer for the GIANT Health Event in 2018.

Zahid Ghadialy, 3G4G @zahidtg
Zahid is a technologist with a deep understanding of architecting world-class mobile products and solutions. With over 20 years' experience in the telecom industry in various roles, he has been an evangelist for mobile and wireless technologies. Over the years he has accumulated a vast following on his blogs and social networks with simple explainer posts and videos. His 3G4G blogs about different aspects of mobile technology and especially 5G and 6G are widely read, including the architecture, deployments, use cases, applications, etc. His YouTube channel is also very popular where he explains many new features expected as part of 5G in the future. While his style and content is unique, he also references many industry publications and provides slides that are very useful to view online. He is also active on Twitter under his @3G4GUK brand helping disseminate the benefits of 5G and why 5G will be needed in the long run. He covers a very wide portfolio of 5G related information that is hard to find otherwise. Until recently, Zahid was a Senior Director looking at Technology & Innovation Strategy in Parallel Wireless. As a brand ambassador, he represented the company in various Open RAN discussions and also created tutorials on Open RAN and O-RAN which are being used as reference for new starters on the topic. **www.3g4g.co.uk**

Dave Roberts, Jabooh Software
David is a technology leader with over 25 years' experience working in the hi-tech arena. He has recently completed a successful project for ghd in conjunction with CW where he carried out the role of System Architect and facilitator. Prior to this he worked in in the C-IoT space where he ran a multi-national R&D department that developed silicon and software designed for the burgeoning IoT market. He was also responsible for driving an agile transformation programme and assisting the organisation with their integration into a large Chinese multi-national telecoms company. Having started his career as a software developer working for BT and Acorn Computers, he went on to hold senior roles in a number of world-class organisations such as Symbian, Cambridge University and Citrix in the areas of Software Development, Project Management, Product Management, Research, Consultancy and Architecture. His background includes leading and developing teams involved in the creation of large-scale integrated hardware and software products, web-based services and CE devices. He is also highly experienced in large-scale agile development practices, agile coaching/transformation and creating and executing strategies for increasing the efficiency and effectiveness of organisations.

Charles Sturman, TechWorks @CharlesSturman
Charles is CEO of TechWorks. Until recently he was responsible for International Marketing for HiSilicon (Huawei's chipset business) with responsibility for product strategy, go-to-market and business development in IoT, edge and smart devices fields. Prior to this he led u-blox' activities in the fast-moving consumer IoT segment (wearables, smart-home and entertainment) following the acquisition of the ARM Software Radio spin-out Cognovo, where we has founder and executive VP Sales & Marketing. Charles has held various positions in system design, business development and product marketing within Acorn Computers, TTPCom, Motorola and ARM. **www.techworks.org.uk**

Profile of speakers

Graham Anderson, Beko @Beko
Graham Anderson is Senior Specialist at Beko R&D, with research interests focused around novel sensors, data analytics, and energy storage/harvesting. Previously he worked as a Senior Scientist at Cambridge Display

Technology working on the development of ink jet printed OLED displays and organic thermoelectric generators. Graham has a PhD from Leeds University in spintronics. **www.beko.co.uk**

Richard Anthony, Protolabs
Highly qualified in Design and Engineering, over the past 12 years Rich has been an integral part of the team at Protolabs. His current role is to provide expert advice and support to customers entering their journey from product development to deciding on the best manufacturing solution for their project. With extensive knowledge of the key manufacturing processes at Protolabs (injection moulding, CNC machining and 3D printing) Rich helps customer take advantage of Protolabs' value, balancing the objective of satisfying customer requests with the potential of downstream risks to deliver acceptable parts on schedule. With a BA in Furniture Design and a MSc in Engineering by Research, which focussed on the applicability on Additive Manufacturing technologies within creative industries, Rich has a wealth of knowledge and is a go-to Engineer for process and capability advice. **www.protolabs.com**

Matthew Bond, Small World Consulting @Small_World_C @REPIC_UK
Matt is a carbon consultant at Small World Consulting, a purpose-driven sustainability consultancy that addresses the urgent climate and ecological emergencies through its research, company carbon assessment, and the communication of climate truths. Matt leads SWC's research and client work on technology, with a special interest in the recycling industry. He completed a 12-month research project in 2021 with REPIC, the UK's largest WEEE producer compliance scheme, investigating the carbon footprint of WEEE in the UK, and has since discussed the implications with key stakeholders including DEFRA and several multinational electronics producers.
www.sw-consulting.co.uk

Sami Gabriel, Vodafone Group Services
Sami Gabriel holds degrees in Mechanical Engineering and IT, with further research in Chemistry and BioPhysics. His work on the characterisation of the dielectric properties of biological materials, is globally used with over 15,000 citations to his work. He has been working and leading in the field of international standardisation for the assessment of RF exposure for over 25 years across several different standards organisations. Working at Vodafone, he is part of the central R&D team with primary responsibility for EMF related work as well as managing one of Vodafone's labs, The R&D Engineering Hub. This lab is primarily for the evaluation of new technologies, the support of trials and the development of proof of concepts. **www.vodafone.co.uk**

Helen Jordan, British Plastics Federation
Helen is the Sustainability Manager at the British Plastics Federation (BPF). Helen oversees all of the BPF's many sustainability activities including Net Zero and Operation Clean Sweep. Helen also manages the activities of the BPF recycling group which she was previously the executive for. The Recycling Group focuses on issues such as food contact regulations, waste shipment regulations, legacy additives and promoting the development of recycling infrastructure within the UK. Helen worked with a consultant to produce the BPF Recycling Roadmap in 2021 which provided a forecast for what plastic recycling could be like in 2030. Before working at the BPF Helen spent 7 years in local government working within the Waste and Recycling Team. **www.bpf.co.uk**

Tashiv Ramsander, Eyesea Green
Tashiv Ramsander is the CTO of EyeSea Green Limited. He has specialised on the development of research ideas into commercial products particularly in the energy sector, focusing on power generation and turbomachinery. After studying Chemical Engineering in South Africa and a PhD in Engineering from the University of Cambridge, he has developed novel commercial products in more than ten countries. He is also the lead of a Cambridge Team to be awarded the Royal Academy of Engineering President's Special Awards for Pandemic Service for the rapid development of Africa's first invasive ventilator. **www.eyeseagreen.com**