



UNIVERSITY of
BRADFORD

Faculty of Engineering
& Informatics

Faculty of Engineering and Informatics Newsletter

September 2020



Welcome from the Dean

The Faculty Coronavirus Recovery Plan has now reached Phase 5, as we prepare the Faculty for the return of students participating in the Welcome Week online schedule and for the start of Semester 1, with the combination of blended learning and face-2-face activities.

By now your line manager should have liaised with you about your proposed working pattern as we enter this phase, and any additional support you may need to undertake your role in the University, on and off campus, throughout Semester 1. IT are also very busy trying to ensure software solutions are implemented to support blended learning, both for staff and students.

Stay safe and keep in touch!



Newsletter summary:

1. Academic in profile
2. RKT News (grants applications, open calls, presentations and awards)
3. Staff and Students' news

Engineering satisfaction: here's why students rate our programmes so highly

Engineering departments at the University of Bradford have won plaudits from two recent independent national surveys, with some programme features ranked best in the country.

Following the release of The Guardian League Tables earlier this month, Bradford was ranked first for students 'satisfied with course' in Chemical Engineering and Mechanical Engineering. This follows promising National Student Survey (NSS) results in July, which saw satisfaction levels for engineering subjects all at or above 90 per cent, including BEng Chemical Engineering (with placement) at 100 per cent.

More here: www.bradford.ac.uk/news/archive/2020/engineering-satisfaction-heres-why-students-rate-our-programmes-so-highly.php



Academic in profile:

Prof Raed A Abd-Alhameed



RAED A. ABD-ALHAMEED is a Professor of electromagnetic and radiofrequency engineering, and he has worked at University of Bradford since 1990, and leads the radiofrequency, propagation, sensor design, and signal processing area, in addition to leading the Communications Research Group.

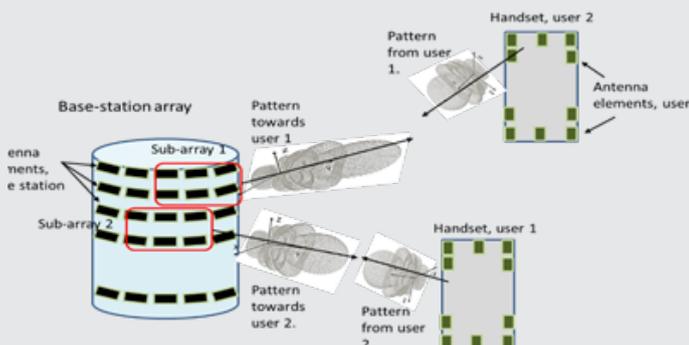
His many years in research has resulted in over 800 publications in academic journals and conferences, five books and several book chapters. He is a principal investigator for several funded applications to EPSRCs and the leader of several successful Knowledge Transfer Programmes, such as with Arris (previously known as Pace plc), Yorkshire Water plc, Harvard Engineering plc, IETG Ltd., Seven Technologies Group, Emkay Ltd., and Two World Ltd. He has also been a co-investigator in several funded research projects including 1) H2020 MARIE Skłodowska-CURIE ACTIONS: Research and Innovation Staff Exchange (RISE): Secure and Wireless Multimodal Biometric Scanning Device for Passenger Verification Targeting Land and Sea Border Control 2) H2020 MARIE Skłodowska-CURIE ACTIONS: Innovative Training Networks Secure Network Coding for Next Generation Mobile Small Cells 5G-US; 3) Nonlinear and demodulation mechanisms in biological tissue (Dept. of Health, Mobile Telecommunications & Health Research Programme; and 4) Assessment of the Potential Direct Effects of Cellular Phones on the Nervous System (EU: collaboration with six other major research organizations across Europe). He was a recipient of the Business Innovation Award for his successful KTP with Pace and Datong companies on the design and implementation of MIMO sensor systems and antenna array design for service localisations.

He is the winner of two University RDF/Publication awards. He chaired several successful workshops on energy-efficient and reconfigurable transceivers: Approach toward Energy Conservation and CO2 Reduction that addresses the biggest challenges for the future wireless systems.

Raed has been a co-editor for Electronics MDPI Journal since June 2019. In addition, he has been a Guest Editor with IET Science, Measurements and Technology Journal since 2009, including Electronics and Internet of Things Journals since 2017. He has been a Research Visitor of Wrexham University, Wales, since 2009, covering the wireless and communications research areas. He is a fellow of the Institution of Engineering and Technology and a fellow of the Higher Education Academy and a Chartered Engineer. Moreover, he has been a senior member of the IEEE since 2013.

Current research interests:

His interest in 5G Mobile and Wireless communications, Localization Services, Wearable and Touchless sensors for patient monitoring, Breast Cancer Detection, MIMO Systems, Beam Forming, Green RF Energy, Computational Methods and Optimizations, Sensor Design, Electromagnetic Compatibility (EMC), Beam Steering Antennas, Energy-Efficient Power Amplifiers, and RF predistorter design applications.



Active projects:

1. Marie Skłodowska-Curie (MSCA), Research and Innovation Staff Exchange (RISE), Call: H2020-MSCA-RISE-2019, Project title: Secure and Wireless Multimodal Biometric Scanning Device for Passenger Verification Targeting Land and Sea Border Control: "eBorder", Jan 2020 – Dec 2023, shared with Prof Rami Qahwaji and Prof Irfan Awan.
2. MSCA Innovative Training Networks (ITN) funded under the European Commission Research and Innovation call, Titled: Secure Network Coding for Reduced Energy next generation Mobile Small cells "SECRET", shared with Prof Rami Qahwaji.
3. A business plan for a company to exploit our group's antenna US Patent App. 16/616,032; Radiation Shield, R Abd-Alhameed, J Noras, R Asif, R Littlehales, filed March 2020; in conjunction with the university's commercialisation of RKTP.
4. In addition to be co-investigator on one Research Development Fund and Innovation including one from British Academy (GCRF Networking Grants).

Research and Knowledge Transfer

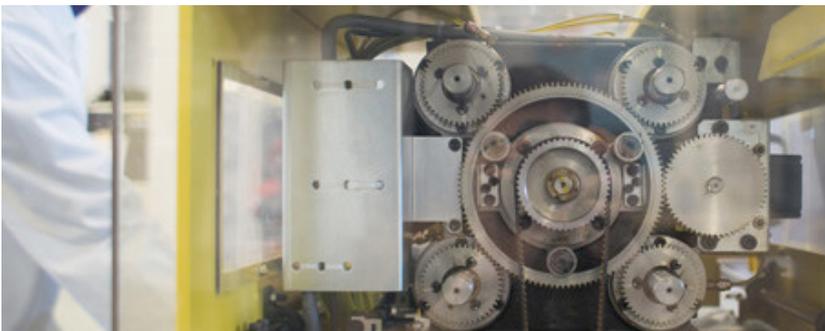
Submitted Projects:

- Circopack Ltd sustainable online packaging, Innovate UK, John Sweeney
- Dual-band reconfigurable-spectrum localization system for challenging environmental conditions, DSTL, Raed Abd-Alhameed
- Techno-Socio-Economic Assessment of Grid Integration of Electric Vehicles and Renewable Energy Sources, UK Pact, Geev Mokryani
- The afterlife of plastics into buildings: use of the recycled PET in smart technologies for concrete self-repair, Innovate UK, John Sweeney



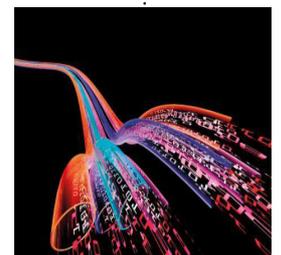
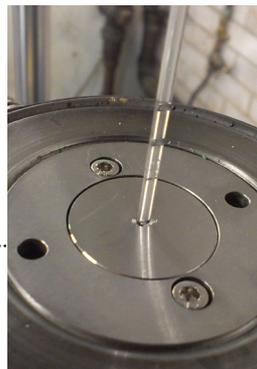
Dr Pete Twigg appointed as FoEI lead for Wolfson linked / facilitated student projects

Pete will co-ordinate across the 3 FoEI Departments that have interests in this area – Biomedical and Electronics Eng (Digital Health & Biostatistics), Computer Science (Big Data), and MDT (Applied Artificial Intelligence).



Open calls for funding:

- Discipline hopping in information and communication technologies , no closing date
- Manufacturing the Future: Standard Research Proposals , closing date: 31 December 2020 at 16:00
- Stephen Hawking Fellowships, closing date: 18 November 2020 at 16:00
- EPSRC are looking for new members for our Engineering Early Career Forum, 19 October 2020 at 16:00



Staff and Students' news

KTP success!

Dr Thakker, Dr Sanna Elfving (School of Law), Dr Savas Konur, Dr Amr Abdullatif, and Prof Irfan Awan and A Y & J Solicitors will work on the newly awarded Innovate UK KTP that will focus on building an AI-based expert system for supporting decision-making in UK immigration law.

This expert system will be developed using state-of-the-art AI techniques to capture tacit knowledge from the experts, legal text, and past cases, to support efficient decision making.



Prof Ben Whiteside and Prof Hassan Ugail will work on the Rolls Royce STEM PPE Enrichment Project

The collaboration project proposal between the University of Bradford and Hanson School is based around a BBC article about PPE goggles not fitting properly, resulting in 14 million goggles being unsuitable for Covid due to fitting issues, and that people who did wear them for long periods of time suffered from pressure point sores.

The team is made up of YR12 STEM students who will model their design solutions by using 3D CAD, then prototype using 3D printing. Bradford Royal Infirmary will help provide some volunteers to be interviewed by the students and have their head profiles scanned.

University of Bradford will help with 3D scanning and 3D CAD scanned models. As part of the enrichment side of the project, the students will learn about emerging technologies and materials under the umbrella of Industry 4.0 thinking and the 'internet of things' which could have a conscious influence within their iterative process.



PhD Viva success

Awesar Hussain has successfully defended his PhD viva on Analytical and Numerical Models for Velocity Profile in Vegetated Open-Channel Flows.

Supervisor: Dr Jaan Pu, Dr Yakun Guo

Congratulations!

Staff and Students' news

Dr Farshid Sefat was appointed Guest Editor – Special Issue: Molecules journal

This Special Issue aims to cover the advancements of molecular sciences in the improvement of medicine and dentistry. On the molecular level, we seek to study how disease can be detected in the early phase prevention from dental diseases, and treatment modalities.

More here: www.mdpi.com/journal/molecules/



Dr Kavian Cooke has been appointed as Topics Editor with the journal 'Crystals'

He will also be guest editing a Special Issue on Crystal growth, Characterization and the development of Thin Films .

The aim of this Special Issue devoted to Crystal growth, Characterization and the development of Thin Films is to address current challenges in Crystal growth for surface engineering and tribology applications.

Submission: Deadline April 30, 2021.

More here: www.mdpi.com/journal/crystals/topic_editors

Publications

Dr Farshid Sefat published his work in the field of Breast Tissue Engineering

Journal: Tissue Engineering and Regenerative Medicine (TERM) – Impact Factor: 3.1
Article Title: Biomaterials for Breast Reconstruction: Promises, Advances and Challenges

Article link: <https://onlinelibrary.wiley.com/doi/abs/10.1002/term.3121>

Book Edited by Dr Kavian Cooke

It is with great pleasure that we announce the publication of a new book entitled “Aluminum Alloys and Composites”. The text was edited by Dr Kavian Cooke and can be found at the link below. DOI: 10.5772/intechopen.81519, ISBN: 978-1-78984-515-0, Print ISBN: 978-1-78984-514-3, eBook (PDF) ISBN: 978-1-83880-080-2, Copyright year: 2020

More here: www.intechopen.com/books/aluminium-alloys-and-composites

Staff and Students' news

New Staff:

Dr Kulvinder Panesar has been appointed as Lecturer to strengthen the Applied Artificial Intelligence programme team and related teaching and research activities.

Kulvinder worked previously at York St John University, and she has been an academic for over twenty years, and a strategically focused senior computing professional wearing different hats including programmer, research scientist, computational linguistic, software and website developer, database designer and developer, systems analyst, project manager and technical consultant. Her research interest is NLP (Natural Language Processing) in AI (Artificial Intelligence), and meaning and knowledge representation (KR) in conversational software agents (CSAs) and conversational AI. This research area is multi-disciplinary spanning AI, data science, agent thinking, linguistics, computational linguistics, NLP, KR, and the Semantic Web. She has conceptually designed and developed a linguistically text based conversational software agent (LING-CSA) framework, addressing the integration, intersection, and interface. The research contributions included: (i) extending the theoretical and computational adequacy of the linguistic theory - Role and Reference Grammar (RRG); (ii) integrating the RRG language model with concept of speech act constructions (SAC) as the linguistic engine; (iii) motivating an agent framework intersecting with the linguistic engine, an agent cognitive and dialogue model to facilitate conversation implemented as a proof-of-concept; (4) insights into the language/knowledge representation interface. Kulvinder is an AI ambassador for AI Tech North and has recently won the WeAreTech100 Women – Winners List 2019 (J.P.Morgan).

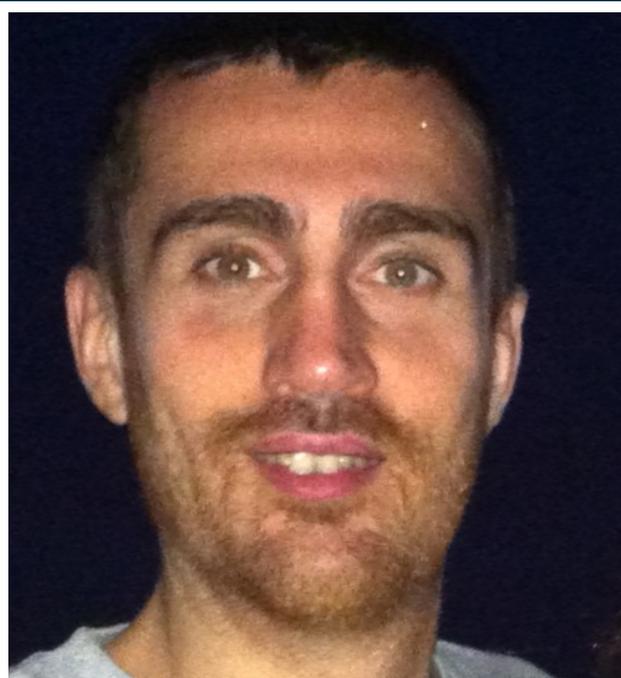


Early Career Research Seminar (ECRF):

Dr Davide Dapelo spoke about the Lattice-Boltzmann for gas mixing in anaerobic digestion and beyond

Prof Felician Campean, Dr Cristina Tuinea-Bobe introduced the group to writing your proposal step-by-step - Before you start to write

Our next meeting is on 21 October 2020, 12 noon.



Promotions

Kate Johnson and Rob Redman have been promoted to Grade 9 Lecturer. Also, Geev Mokryani has been promoted to Senior Lecturer in the Department of Biomedical and Electronics Engineering.

Dr Raj Patel was promoted to the role of Professor of Chemical Engineering.

Congratulations!

