UNIVERSITY of BRADFORD

Faculty of Engineering & Informatics

Faculty of Engineering and Informatics Newsletter

November 2021

Welcome from the Dean

What makes a Bradfordian?

During data collection for the last Census, researcher Julia Armstrong, who is working with the University of Bradford, spoke with people and communities in Bradford and she found people's sense of identity is linked to the city, the changes they have seen in the city, and their hopes for the future.

Julia's project was one of several pitched during this year's UNIfy festival and her findings will be presented at the UNIfy festival in 2022. If you would like to take part in `What is a Bradfordian', please contact Julia via email at: whatisabradfordian@gmail.com.

As a contributor, you would agree to a conversation with Julia (which will be recorded) and for a couple of photos to be taken. For the next stage of the project, the audio recording, photos and transcription of your conversation will be available for people to see and listen to. Your contributions may also form part of further work about Bradford created by artists and partners.

More here>>

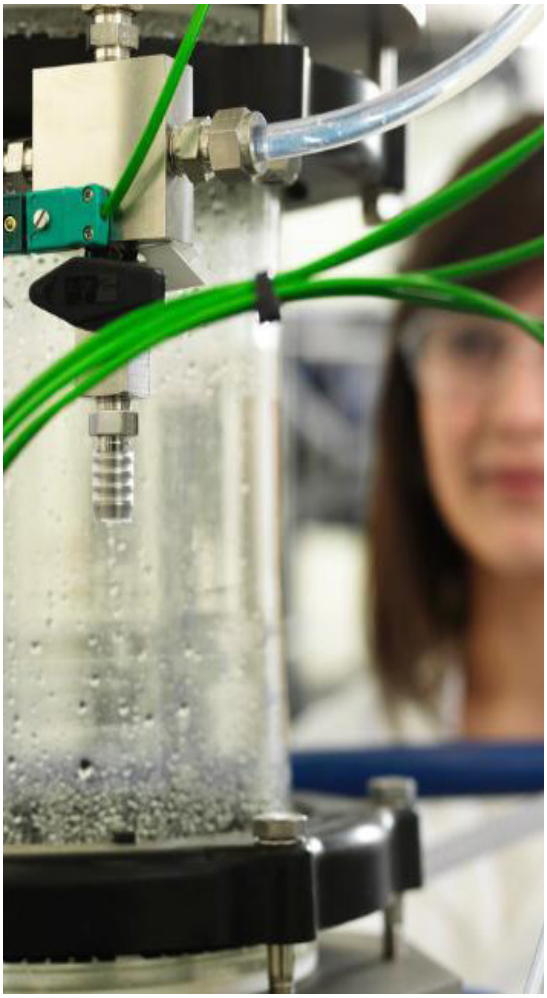
Bradford delighted by Turing Scheme commitment

The Turing scheme - named after mathematician Alan Turing - replaced the previous Erasmus+ programme, which ended when the UK left the EU. The scheme is especially focused on levelling up opportunity for students from disadvantaged backgrounds – with 48% of placements funded this year for students coming from less privileged backgrounds.

The University was awarded £363,000 by the Scheme, this enables our students to take up study, work, and short-term placements around the world.

More here>>

Newsletter summary:



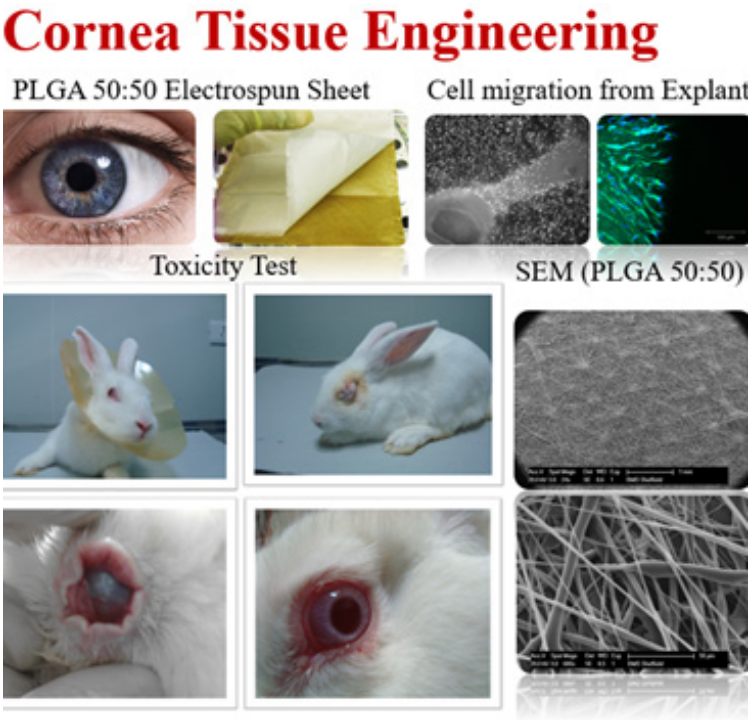
Academic in profile:

Dr Farshid Sefat

Dr Farshid Sefat is an Associate Professor and programme leader in Biomedical and Electronic Engineering Department at the University of Bradford (UK) and previously was head of Biomedical Engineering Department at King Faisal University (Saudi Arabia) and also a Visiting Professor at Stevens Institute of Technology (New Jersey, USA). He completed his post doctorate research assistant at University of Sheffield (UK) in the area of cornea tissue engineering. He received his Ph.D. (2013) and BEng. (2005) degrees from University of Bradford (UK) both in Biomedical Engineering mainly focusing on bone cell engineering. He also obtained his MSc. (2006) in Cell and Tissue Engineering from Keele University (UK).

His research is based on developing biomaterials to control cellular behaviour with particular emphasis in developing engineered materials for various tissue engineering applications. He is an author on >100 peer-reviewed journal articles, editorials, and review papers, >50 book chapters and 8 edited books. He is on the editorial boards and reviewer of >30 numerous journals including Materials Today, Acta Biomaterialia, IEEE, Bone, MDPI, Journal of Orthopaedics & Rheumatology, Materials Science and Engineering C, Journal of Biomechanics and many more.

For the past 11 years, Dr Sefat has been focusing his research on Cornea Tissue Engineering with special attention to full cornea fabrication and replacement. For the past 5 years, he has been working on fabrication and characterization of vascular graft using electrospinning technique. Management of the vaginal biofilm is another interesting research conducted in his lab. Currently he is supervising 20 undergraduate and postgraduate research students in his lab.



Current research interests:

- Tissue engineering of soft and hard tissue including cornea, skin, breast, ligament/ tendon, bone
- Early diagnosis and treatment of glioblastoma, breast cancer, prostate, and ovarian cancers

Research projects:

- Treatment of Bacterial Vaginosis
- Fabrication of Vascular Graft
- Fabrication of Full thickness Functional Cornea

Research and Innovation

Projects submitted:

- 6G: Secure Space and Terrestrial Integrated Networks for Cl6G: Secure Space and Terrestrial Integrated Networks for Cloud Based In-Flight Broadband Services, Raed Abd-Alhameed
- ULTRA: Ultra-Fast Terahertz Band Communications for Future Wireless Systems, Raed Abd-Alhameed
- 3D-printed and demountable prefabricated elements made from CDW, Ashraf Ashour
- Building Energy Management System for Nigerian Buildings, Geev Mokryani
- Sustainable ultrahigh-performance concrete containing quarry, construction and demolition wastes, Ashraf Ashour
- Fibre Extrusion Technology, Adrian Kelly

Disability History Month

18th November 2020 - 18th December 2020 is Disability History Month, the annual celebration of the history, achievements, and contributions of disabled people.

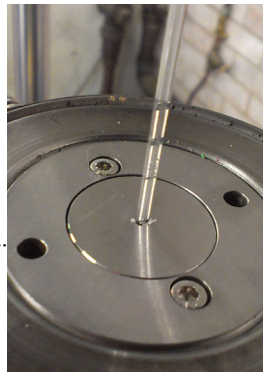
The University of Bradford staff network for disability equality, 'n-able', will be hosting a series of events throughout Disability History Month to provide space for conversations around overcoming barriers and challenging stereotypes.

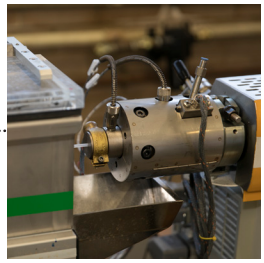
Events will include training in online accessibility, talks from guest speakers, research presentations and more. Booking details and further information can be found on this webpage or by contacting n-able@bradford.ac.uk.

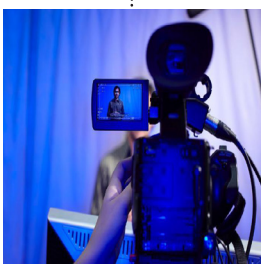
More details of these events are available here>>

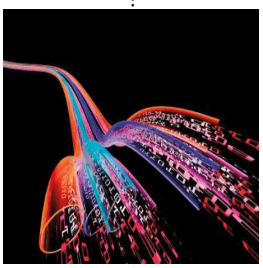
Open calls for funding:

- Pre-announcement: explore people's relationships with digital technologies, Closing date:TBC
- 2D materials-based devices and systems for energy storage and/or harvesting (RIA) Closing date: 16 November 2022 17:00Brussels time
- Technologies and solutions for data trading, monetizing, exchange and interoperability (AI, Data and Robotics Partnership) (IA), Closing date: 05 April 2022 17:00 Brussels time









Staff and Students' news

Dr Thakker talks to ITV about Air Quality

Dhaval spoke about the evidence that his research brings around the impact of poor air quality, both indoors and outdoors, on respiratory health.

Dhaval's work with Bradford Council, under the EU SCORE project, in creating IoT inspired solutions to assist cities in developing new and more efficient ways of delivering essential services, was the root to the air quality research. According to the charity Asthma UK, about 5.4m people in the UK live with asthma, including 1.1 million children. Bradford, like many other local authorities in the UK, has been required by the Government to produce an air quality plan to show how it will bring the levels of nitrogen dioxide within legal limits in the shortest possible time.

The air quality topic was covered also by the 'How Are We Helping Communities to Improve Bradford's Air quality?' event at Bradford on 25th November.

Polymer IRC presence at International Polymer Conference

The Polymer IRC had seven papers in the recent Polymer Processing Society 2021 International Conference in Montreal - two keynotes (delivered online by Prof Phil Coates covering our in-situ x-ray studies with our joint laboratory in Changchun, on two of our key research areas, namely solid phase orientation processing and micro moulding).

Bana Shriky (STARTER Research Fellow) also delivered 2 papers relating to her work on formation and characterisation of gels and bulk recycling of polymers. A modelling paper on solid phase orientation processing of polymers by Paul Spencer and team, and two papers by Gulstan Serwan Ezat, our former PhD student on medical technology, completed the set at this leading international conference in the polymer engineering area.

POLYMER PROCESSING SOCIETY

Staff and Students' news

International Men's Day 2021

On 19th November we celebrated International Men's Day. The University Gender Staff Forum is delighted to host an event to mark this day when we prize the positive value men bring to the world, their families and communities and highlights positive role models and raises awareness of men's well-being.
One of the six pillars of International Men's Day is to improve gender relations and promote gender equality not only for men but for women too. In this light the theme for 2021 is 'Better relations between men and women'.

Peter Lassey, Faculty Associate Professor, talked about the White Ribbon Campaign.

More about the event here>>

Prof Oltean-Dumbrava and Margherita Finamore - COP26 Great success

Prof Oltean-Dumbrava was recently actively engaged with the COP 26 through various activities:
• The UN One Planet Sustainable Building and Construction (SBC) State of Play for Circular Built Environment report presented to COP26 was well received.

• The COP26 event on the Virtual Platform on the 5th November 'BUILD BETTER NOW Empowering young people to become the climate-aware built environment professionals of the future: What do we need to do now?' has attracted a lot of attention and questions from the international audience, which are still being addressed.

• Attendance of the World Business Council for Sustainable Development (WBCSD) 'The Business Case for Circular Buildings: Exploring the economic, environmental and social value' report, and Arup - Ellen MacArthur Foundation, 'Circular Building Design Toolkit' were presented on the 9th November. Crina was invited to contribute to the next year's WBCSD report.

• Following attendance of the District Heating and Cooling: On the Road to 5th Generation, a D2Grids event on the 10th November, the possibility of a collaboration with the international consortium was discussed.

• Margherita Finamore (Crina's PhD student) and Crina were invited to attend the International Ceremony of the Green Solutions Awards 2020-21 on 10th November at the Glasgow City Chambers. Construction21, the organiser of the international competition, received 131 projects in total for the seven categories entered in the competition. The International Jury awarded the Prize for the Energy and Temperate Climate International Platform category to the Secondary School project built in Pesaro, Italy, under Margherita's coordination (photo). The same project achieved a LEED Platinum with a score of 88 and received the Leadership Award from the United States Green Building Council (USGBC) this summer. Margherita is currently the leader of the research line on sustainable construction, and responsible for public works at Pesaro Council as project manager using environmental sustainability and energy efficiency design. Crina was invited to join the International Jury for the competition next year.

Staff and Students' news

Mainstreaming Global Mental Health

The event on 15th November was an international knowledge exchange event hosted by the GCRF Challenge Cluster seed-funded project, Mainstreaming Global Mental Health.

This was run as a 'match-making' opportunity to forge new collaborations, learn about 'on the ground' delivery of Global Mental Health impact using innovative practices. Opportunities to embed Global Mental Health impact in research across the range of Sustainable Development Goals were discussed. Furthermore, the group looked into methods to trigger a step-change in how the research community approaches mental health issues.

More about the evet here>>

SCOPE.

Dr Twigg interviewd by Dutch SCOPE.

The magazine covered Clinical Technology courses around the globe - United Kingdom, Australia and South-Africa. The Delft team wanted to know what does the job entail for a clinical technologist abroad?

From Bradford, SCOPE. interviewed Dr Peter Twigg and Elzarie le Roux and highlighted the team's work on orthopaedics, prosthetics for the knee and hip, tissue engineering, specifically cartilage tissue.

Pete established the course Clinical Technology in 2001, working together with hospitals from the area. The course is integrated as far as possible, teaching medical material as well as the technical.

Elzarie studies Clinical Technology at Bradford. Originally from South-Africa, she is completing her studies on human movement science and hopes to be able to work in this industry after finishing her studies, preferably in tissue engineering.

The full article here>>

Staff and Students' news

Rainwater Reuse Project (RRP) at Lagos, Nigeria

Dr Jaan Pu and his PhD student, Chuks John, have just got four journal publications accepted. The papers are the outputs of the RRP Project, Ikorodu of Lagos, Nigeria, that concentrate on gathering data regarding rainwater collection. Water scarcity is a huge problem in Africa and hence rainwater becomes a crucial water source for fulfilling basic human needs, i.e. as potable or non-potable waters. However, less attention has been given by African countries to the effectiveness of common rainwater treatments to ensure the population's health. These papers cover the impact of different household treatment techniques on health.

Read more here:
1) Journal of Water, Sanitation and Hygiene for Development (IWA) - Reusable rainwater quality at the Ikorodu area of Lagos, Nigeria: impact of first-flush and household treatment techniques

2) Journal of Water and Climate Change (IWA) - Health-risk assessment for roof-harvested rainwater via QMRA in Ikorodu area, Lagos, Nigeria

3) Water Supply (IWA) - Impacts of sedimentation on rainwater quality: case study at Ikorodu of Lagos, Nigeria

4) Fluids (MDPI) - Sediment deposition within rainwater: Case study comparison of four different sites in Ikorodu, Nigeria







Staff and Students' news

Dr Kavian Cooke publishes work on Diffusion Brazing of IN738 to SiC Ceramic

The paper covers the novel process of diffusion brazing of SiC ceramic to IN738 using an Ag-Cu-Ti powder-mixture as an interlayer. The paper also quantified the impact of the bonding time (30 and 45 min) on metallurgical features and shear strength of the joints. The outcome revealed that raising the bonding time resulted in expanding the brazing layer from 46.98 µm to 55.31 µm. Besides, increasing the bonding time also enhanced the shear strength of the SiC/Ag-Cu-Ti/IN738 joints.

Full paper here>>

PhD success

PhD student Morteza Soleimani, supervised by Prof. Felician Campean and Prof. Daniel Neagu has successfully defended his PhD thesis entitled 'Integration of Hidden Markov Modelling and Bayesian Networks for Fault Analysis of Complex Systems'.

Congratulations!

QS World University Rankings

QS World University Rankings is used by many students and industry to compare the world's top universities and explore leading institutions by region and subject.

Our University, which last year was ranked 601 from 1000, is encouraging faculties to try to improve this ranking by returning all relevant external engagment information.

Please add your new connections with academia or industry here >>

Staff and Students' news

New staff

Dr Amna Qureshi is a Lecturer in Cybersecurity in the Department of Computer Science. Prior to joining UoB, Amna worked as a Senior Researcher at the Universitat Oberta de Catalunya in Barcelona, Spain. Her research interests are designing, analysing, and implementing cryptographic protocols with security and privacy guarantees using concepts of applied cryptography, distributed systems, and logic programming. Besides research, Amna has more than five years' experience teaching at the Electrical Engineering Department of the COMSATS University Islamabad, Pakistan.

Dr. Gurkan Yildirim is currently working as a Marie Skłodowska-Curie Individual Fellow at the University of Bradford on the EU-funded project 'Construction and Demolition Waste-based "Green" Lego-like Structural Components (CodeLEGO)'. Gurkan joined us from Hacettepe University, Turkey, where he worked as Associate Professor of Materials Science and Construction Materials.

Early Career Research Seminar (ECRF)

Dr Mai Elshehaly told us more about the project 'Digital makers - today's school children, tomorrow's digital leaders'.

Dr Cristina Tuinea-Bobe introduced the forum to the new Faculty Research Strategy

Our next meeting is on 15th December 2021, 12 noon, and is followed by a 'Shut-up and write' session.

More here>>