

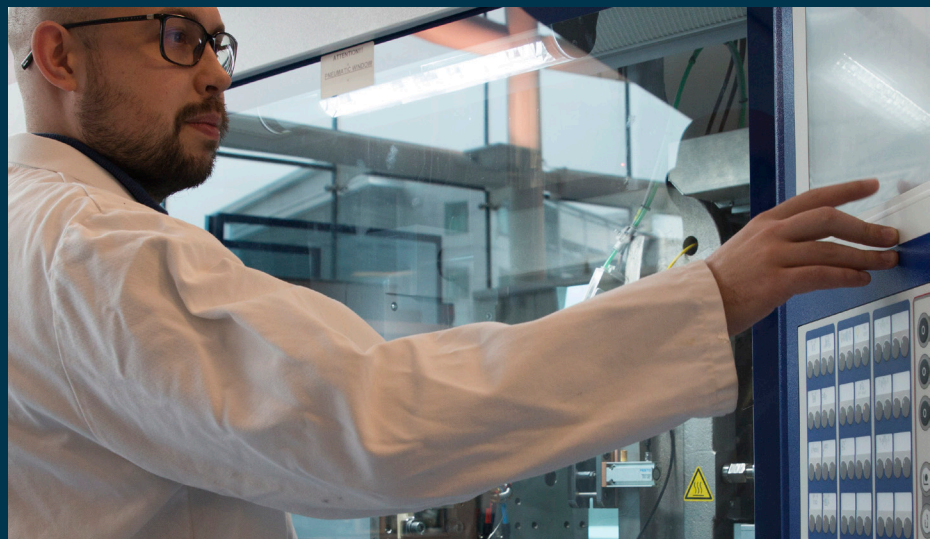


UNIVERSITY of
BRADFORD

Faculty of Engineering
& Informatics

Faculty of Engineering and Informatics Newsletter

April 2021



Welcome from the Dean

During April the Government announced changes to the national lockdown restrictions and provided additional details about asymptomatic testing for COVID-19. The University campus remains open, but we will continue to limit the number of people on campus to those who are there for permitted purposes, including attending for essential on-campus teaching, learning, research, services, and facilities.

All students who need to be back on campus will have already been advised by their programme teams before the Easter break. All other students will now continue with online learning and teaching for the remainder of Semester 2, in line with current Government guidance. There are likely to be further changes possible from 17 May 2021 but given this is the start of the examinations period they will have little impact on the main cycle of Semester 2. Further information to follow from the University and Faculty.

The University currently offers, and will continue to offer, twice-weekly lateral flow tests to all our students and staff.

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

University of Bradford ranked #1 in country for improving students' life chances

The University of Bradford has topped a new university league table for England based on its impact on improving students' social mobility.

The new English Social Mobility Index, published on 4 March by the Higher Education Policy Institute (HEPI), is the first to measure and compare the impact universities have on people's social mobility - in other words, their ability to change their social status relative to one's current social location within a given society. The University of Bradford was ranked first in the country out of more than 100 universities. This comes on the back of the University being named 'University of the Year for Social Inclusion 2019/20' by The Times and Sunday Times.

More [here](#)>>



Academic in profile:

Prof Tim Gough



Tim (BEng CEng MIMechE FHEA) is Professor of Fluid Mechanics and Head of Department of Mechanical & Energy Systems Engineering. He is also Deputy Director of the IRC in Polymer Engineering and Manager of their Materials Characterisation laboratories.

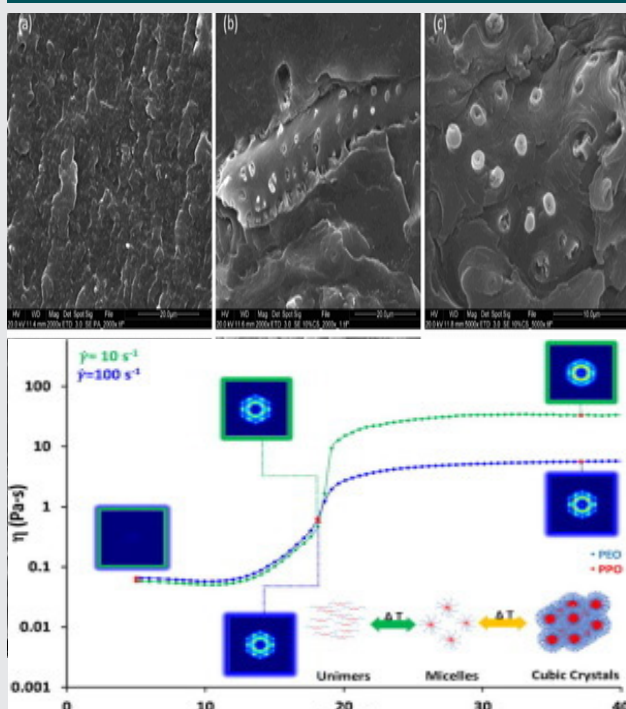
His main research interests are in the effects of flow upon materials development for polymeric and pharmaceutical applications. His current work involves the application of optical, spectroscopic, neutron and x-ray probes to soft matter and pharmaceuticals undergoing deformation and crystallisation to elucidate the effects of shear on structure and its influence on processing and end product properties. He is a frequent user of large-scale international neutron and x-ray facilities in the UK, France and the US to aid with these studies.

He holds a first degree in Mechanical Engineering and a PhD in Fluid Mechanics from the University of Surrey for his work on turbulent boundary layers and wakes. Following this he moved to Bradford to work on projects on cyclonic two-phase separations for the brewing and oil industries prior to working on the two large EPSRC funded Microscale Polymer Processing programmes.

He has many active links with industry and academia in the fields of polymer processing and pharmaceuticals and holds three patents in these areas.

He has supervised 13 PhD and 2 MPhil students to completion and currently supervises four PhD students in the fields of fluid mechanics, hydrogels and pharmaceutical processing. He was awarded the University's Baroness Lockwood Award for Distinguished Teaching in 2010 and was especially pleased to be awarded Lecturer of the Year in the inaugural UBU Student Leadership Awards in 2019.

Tim has published over 50 peer-reviewed journal papers as well as over 100 conference papers in polymer science, engineering, separations technology and aerodynamics.



Current research interests:

- synthesis of well-characterised, tailored, polymeric materials through processing
- reactive extrusion (one patent filed)
- rheology
- applications of computer-based instrumentation to a broad range of scientific problems.

Research projects:

- GraNet - Graphene / Polypropylene Composite Nets for Filtration
- Flow induced crystallisation in polymers: from molecules to processing
- A Novel Continuous Method for Co-crystal Formation
- Dyson – Extrusion of Polymer Films

Research and Knowledge Transfer

Projects submitted:

- Machine Learning-Driven Closed Loop Recycling of Plastics (ML-RecyPlast), Adrian Kelly, Phil Coates
- Assessment of Impact of Impurities on Hydrate Phase Equilibria of CO₂-rich Systems for Carbon Capture and Transportation Applications, Nejat Rahmanian
- RobacteriaFibres: - Regenerating Textile Fibres from Recycled Garment Wastes via Emerging AI, Robotics and Bacteria Technologies, Adrian Kelly
- Recycling behaviours with Gamification Techniques(RIGHT), Dhaval Thakker
- Floreon Tree Guard, Adrian Kelly



KTP success with U Energy Ltd

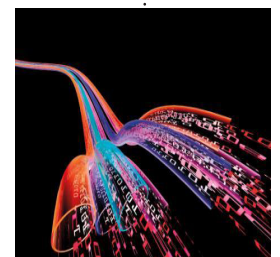
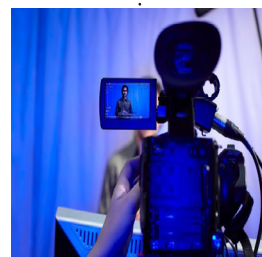
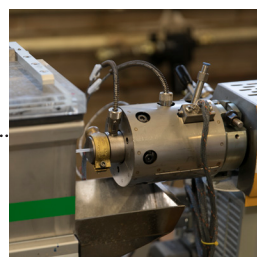
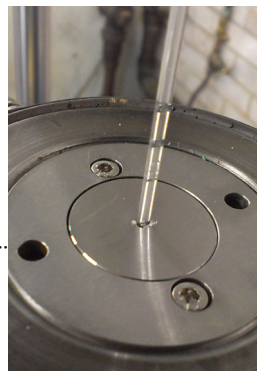
Our KTP application with U Energy Ltd was awarded .

This KTP project is led by Dr Geev Mokryani in collaboration with Prof Abd-Alhameed , Dr Konur and Dr Thakker.

The company and the academic team will develop an Energy Management System (EMS) tool based on predictive control, to support the Utility Grid in the event of Frequency deviations, and assist future Electric Vehicle Charging Stations with the integration of a Hybrid Energy Storage System (Battery and Supercapacitor). This expert system will be developed using advanced power and control system theory.

Open calls for funding:

- Innovation in time dissemination and application: Closing date: 9 June 2021 11:00 UK time
- Pre-announcement: business and academia prosperity partnership: Closing date: To be confirmed
- Innovate UK Smart Grants January 2021: Closing date: 26 May 2021 11:00 UK time
- Statement of community need: NERC scientific support and facilities: Closing date: 22 June 2021 16:00 UK time



Staff and Students' news

Outstanding Achiever Awards 2020/2021

Carol Vickers won the Outstanding Contribution to Equality, Diversity and Inclusion for her work as Co-Chair of n-able and for championing equality, diversity and inclusion (EDI) throughout the University and beyond.

Carol is an expert on disability, gender equality, and EDI and is Co-Chair of the University of Bradford's Disabled Staff Network, n-able. Furthermore, she is a member of the Staff Gender Forum, Faith Forum, and also the Neurodivergent Staff Network.

Cristina Tuniea-Bobe received a commendation in the Outstanding Contribution to Business and Community Engagement award for her work in the Polymer IRC.



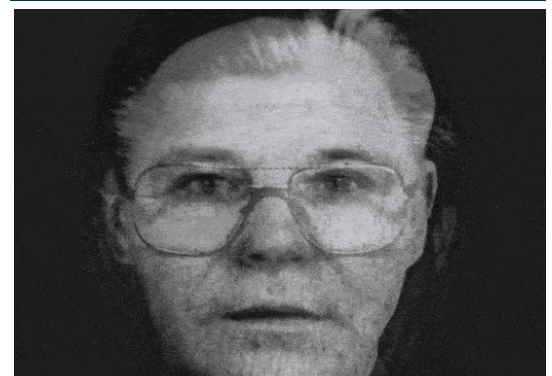
Facial mapping used in the investigation to find an alleged Nazi war criminal

Prof Hassan Ugail worked along the BBC News team 'The Nazi in the family'.

The BBC News investigation has found that an alleged Nazi war criminal, who settled in the UK, could have worked for British intelligence during the Cold War. Everything started with John Kingston's suspicion around his stepfather.

The BBC found evidence of his Nazi activity from US newsreel material from 1954. The team contacted Hassan to apply facial mapping to make sure they have the right person.

You can read the full story [here>>](#)



The banner features a smartphone screen displaying a car's charging status with a 78% battery level and a 'CHARGING' indicator. Text on the banner includes 'aiR-FORCE WEBINAR', 'WEDNESDAY 19th MAY 10:00 - 11:00', and logos for Jaguar, Land Rover, University of Bradford, and IDE Institute of Digital Engineering. The slogan 'An Art of the Possible Webinar' is also present.

IDE aiR-Force project successfully delivered

The aiR-Force project delivery was classified as outstanding by the funder and the JLR team. The team led by Prof Felician Campean exceeded their expectations.

JLR is looking at implementing the DPF strategy in a software upgrade to be deployed in cars in June. The JLR CEO included a slide on this project in his external presentation of outstanding AI work at JLR.

IDE will organise a webinar in mid May to disseminate the project outcomes.

More about this [here >>](#)

Staff and Students' news

ChemEngDayUK 2021

The University of Bradford Department of Chemical Engineering was delighted to host ChemEngDayUK 2021, welcoming research staff and students from UK universities and industrial collaborators to discuss developments and innovations in their fields of work.

Our warm congratulations to the Organising Team: Prof. Hadj Benkreira (Chair), Prof. Raj Patel, Prof. Iqbal Mujtaba and Dr. Yakubu John (co-chairs), Department of Chemical Engineering, University of Bradford, UK.

More about the event [here >>](#)



Finalists for the Rolls-Royce Schools Prize for Science & Technology

Prof Ben Whiteside and Dr Cristina Tuinea-Bobe are involved with Hanson School on a STEM PPE Enrichment Project.

The Bradford team was shortlisted as a finalist following the activities undertaken as part of the project.

Please see the project video [here >>](#)



Dr Jaan Pu new publications

Please see below Jaan 2021 publications - 3 papers published and 3 in press, and all indexed by ISI WOS, Scopus.

1. Health-risk assessment for roof-harvested rainwater via QMRA in Ikorodu area, Lagos, Nigeria, Journal of Water and Climate Change, In press [here >>](#)
2. Impacts of sedimentation on rainwater quality: case study at Ikorodu of Lagos, Nigeria, Water Supply, In press [here >>](#)
3. Experimental observation of turbulent structure at region surrounding the mid-channel braid bar, Marine Georesources & Geotechnology, In press [here >>](#)
4. Sediment Deposition within Rainwater: Case Study Comparison of Four Different Sites in Ikorodu, Nigeria, read [here >>](#)
5. Velocity Profile and Turbulence Structure Measurement Corrections for Sediment Transport-Induced Water-Worked Bed, read [here >>](#)
6. Flood Suspended Sediment Transport: Combined Modelling from Dilute to Hyper-Concentrated Flow, read [here >>](#)

Staff and Students' news

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 ranked 601 from 1000 this year and we would like to top this up in the future. To do this we need information from you in relation to your engagement activities.

Please add your new connections with academia or industry [here >>](#)

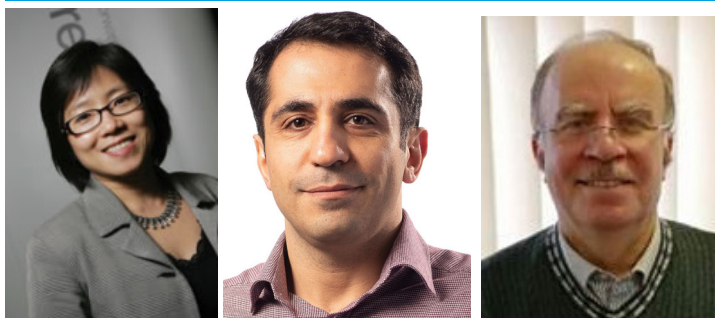


Dr Mokryani, Prof Hu, Prof Abd-Alhameed Guest Editors of the Energies Journal

The Bradford team are the editors for the special issue of Energies (ISSN 1996-1073). This special issue belongs to the section 'Smart Grids and Microgrids'.

The deadline for manuscript submissions is 20 January 2022.

More information [here >>](#)



Frank Morton Sports Day

The Chemical Engineering Society Bradford hosted the prestigious Frank Morton Sports Day on 13 February 2021. This is an annual sporting competition between the Students of Chemical Engineering Departments from UK and Irish Universities.

This year the event was held online for the first time, due to the COVID-19 pandemic, and attracted interest from 15 universities, with a total of 433 students attending. The participants enjoyed competitive online activities and games, quizzes, career fairs, selected guest speakers and much fun. The event was sponsored by the Institute of Chemical Engineering, the Faculty of Engineering and Informatics at the University of Bradford, and Pfizer and GSK pharmaceutical companies.

More about the event [here >>](#)



Staff and Students' news

4th Annual Innovative Engineering Research Conference (AIERC) 2021

The Annual Innovative Engineering Research Conference (AIERC) was organised virtually by the Faculty of Engineering and Informatics at the University of Bradford on April 23, 2021.

The conference was a success due to staff and students coming together and contributing not only by presenting but also by getting involved with the organisation of the conference.

Special thanks to the following students that contributed to the conference organisation:

Kerry Ayrton (PhD student representative)
Salem El Hassan (PhD student representative)
Dr Mohammad Abou Salhab (PhD student representative)
Damilola Agbabiaka (PhD student representative)
Rameez Raja Kureshi
Yusuf Tukur



Early Career Research Seminar (ECRF) and 'Shut-up and Write' session

Dr Farshid Sefat spoke to the forum about his research on 'Application of PCL and PLGA Electrospun Polymers for Vascular Tissue Engineering'.
Dr Cristina Tuinea-Bobe discussed the ways forward for the forum and presented the funding available.

The forum joined, after the standard ECRF meeting, a 'Shut-up and write' session where they concentrated on the development of presentation, research bids, reports and papers. The sessions will take place weekly on alternate Wednesdays and Fridays.

Our next meeting is on 19 May 2021, 12 noon, followed by a 'Shut-up and Write' session.



Centre for Visual Computing (CVC) Research Seminar Series (RSS)

The 9th seminar from the Centre for Visual Computing (CVC) Research Seminar Series (RSS) took place on Thursday 22 April 2021 and had Sami Cornick and Stuart Lane ([Round Midnight Ltd](#)) introducing to us 'Creative Tech in Education'.

They explored the research, development, and delivery of ground-breaking VR in Education programme, Virtual Decisions. Funded by Innovate UK in 2018, Virtual Decisions is now used in schools and youth services across the West Midlands and Greater Manchester as an early intervention tool for young people who are at risk of youth violence and criminal exploitation.

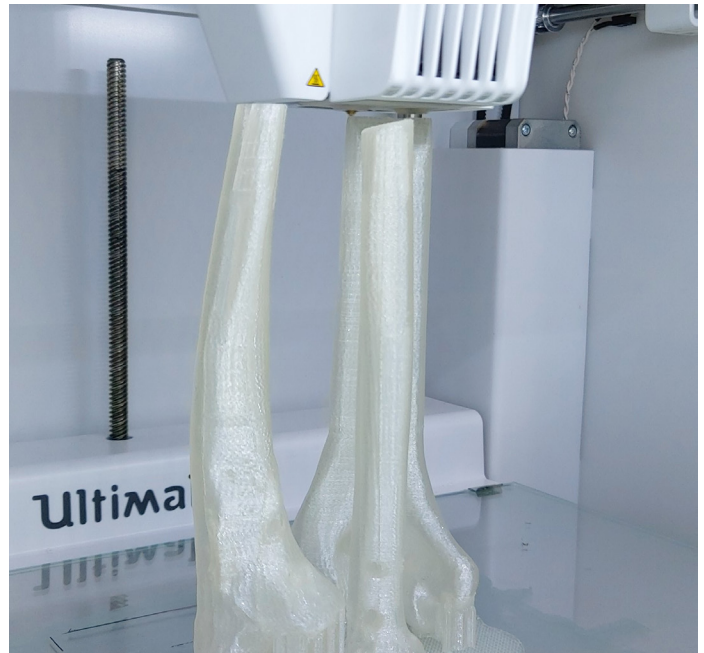
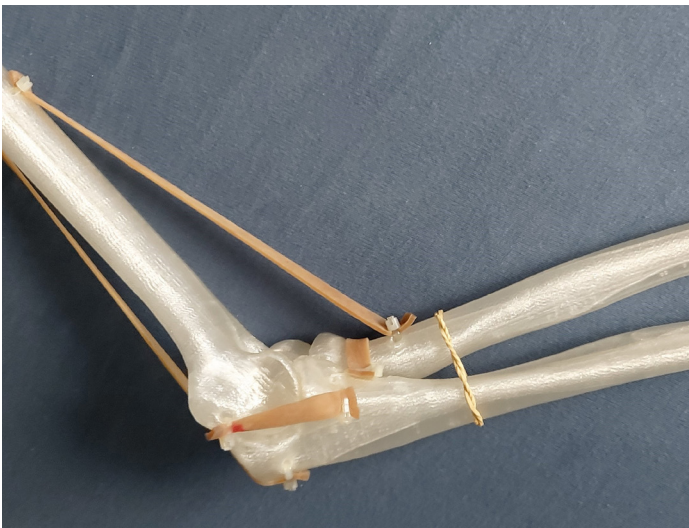


Staff and Students' news

3D printed Elbow Bones for Home Learning

This year, a 100% practical module called “Design, Build and Test” has been transformed to a virtual and home-practice module. Technicians have been involved in supporting academics, producing videos on practical skills and helping with the production of student designs covering the four Engineering subject areas with the module.

One area is Biomedical Engineering and Clinical Technology, this is supported by Lead Research Technician Dr S A Behruz Khaghani, who had the idea of how to conduct the project practical via home learning. All students were provided with 3D printed bone parts, cable ties and rubber bands to represent key ligaments and muscles of the elbow. During campus lockdown, email and online consultations were provided to the students. They had to identify the bones from the 3D replicas and therefore indicate which joint could be constructed. They were asked to the key ligaments and muscles of the joint, determine where on the bone replicas these tissues are located, and also calculate the length of their own humerus bone. They were asked to assemble the parts at home and send images of the assembled elbow joint, along with individual written coursework, and a group presentation, via email. Special thanks go to Dr Michael Hebda for his support with the 3D printing of the bone parts.



Faculty promotions through the Bradford Academic scheme

We have recently seen our first successful staff promotions through the new Bradford Academic Scheme. The following members of staff have all had a positive outcome as a result of submitting regrade applications to the Faculty and University:

Promoted to Associate Professor:

Eduardo Munive-Hernandez – Mechanical and Energy Systems Engineering

Farshid Sefat – Biomedical and Electronics Engineering

Promoted to Assistant Professor:

Amr Abdullatif – Computer Science

Sohag Kabir – Computer Science

Congratulations to everyone!

There is now another opportunity to submit a regrade application this year, the deadline is 6th September 2021. Academic staff should discuss their case with their line manager in the first instance. All completed applications must be submitted by 6th September on HR ServiceNow. Further details on the Bradford Academic Scheme can be found [here >>](#)

