

# Faculty of Engineering and Informatics Newsletter

May 2021



# Welcome from the Dean

We continue to work hard to make sure that our University is a safe environment and that, within Government guidance and current restrictions, we can provide the best experience possible. We must remain vigilant and be mindful of our actions in order to limit any further spread of Covid-19 and its variants – it is, therefore, important to note that social distancing, mask wearing, and testing guidelines remain in place.

The Government is providing home testing kits to students and staff to increase testing uptake and help limit virus transmission. Upon return to campus, all students and staff are encouraged to take three supervised tests (three to five days apart) at the asymptomatic Lateral Flow Device (LFD) testing site on campus - this is currently located in the Great Hall in the Richmond Building. Booking can be accessed [here>>](#).

All tests will be free, and all students and staff who test positive from an LFD test will need to self-isolate for 10 days, unless they receive a negative PCR test within two days.

On campus, the major cladding work on the Horton D Building is proceeding well, and I share an image of what the final appearance should be like in the picture on the right.

Stay safe and keep in touch!

## University a leading example of gender equality, with two more Athena Swan awards

The University of Bradford has achieved two more coveted Athena Swan Awards, meaning it is a leading example in terms of ensuring women (and men in some departments) are properly represented in the workplace.

The new awards are: a new institutional Bronze Award and a Bronze Award for the Faculty of Engineering and Informatics.

Vice-Chancellor, Prof Shirley Congdon said: “I am delighted that the University of Bradford has been conferred these additional Athena Swan Awards, demonstrating our commitment to the advancement of gender equality. We value the individual differences that people bring to our organisation and society at large. Being committed to equality, diversity and inclusion will help us realise our strategic ambition to support social mobility.”

More [here>>](#)



## Newsletter summary:

### 1. Academic in profile

### 2. RKT News (grants applications, open calls, presentations and awards)

### 3. Staff and Students' news



# Academic in profile:

## Professor Ashraf Ashour

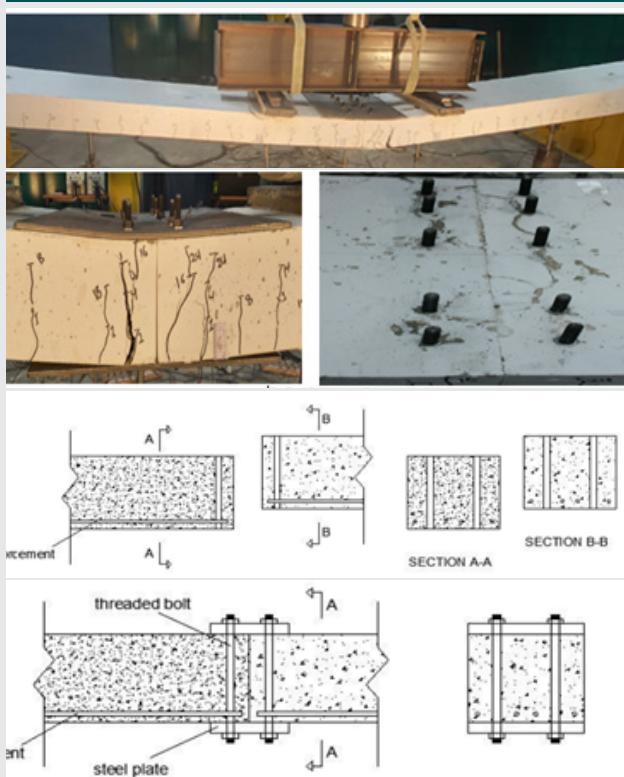


Ashraf (ORCID: 0002-4800-6060) is a Professor of Structural Engineering, he received his PhD in Structural Engineering from Cambridge University, BSc(Hons) and an MSc from Mansoura University, Egypt. During his academic career at Bradford, he has taken on the roles of UoA-12 REF coordinator (2017-2021), Director of Research and Knowledge Transfer & Deputy Head of the School of Engineering (2016-2018) and Head of the Civil Engineering Department (2007-2012). Ashraf is a Fellow of the Institution of Structural Engineers (IStructE), a Fellow of the Higher Education Academy (FHEA) and was Editor-in-Chief of the Structures and Building Journal, ICE (2014-2017).

Ashraf has extensive research experience in the development of new construction materials and their use in structural engineering as well as techniques to extend the life of concrete structures. He has authored and co-authored more than 200 journal and conference papers, with citation indices in [Google Scholar](#): 210 papers, citations: 4607, h-index=35, i10-index=89. He is ranked among the top 0.6% scientists in Civil Engineering in accordance with the [Global Database produced by Stanford University](#) (Top 2% scientists-2021). He has successfully supervised 20 PhD students and 18 post-doctoral researchers. He has been the external examiner for 32 PhD students and 6 undergraduate and postgraduate taught courses in various UK and overseas universities.

A team, led by Professor Ashraf Ashour in collaboration with Professor Mustafa Sahmaran, Hacettepe University, Turkey, was awarded the [Newton Prize 2020](#) for the efficient recovery of valuable resources from construction and demolition waste towards circular economy in construction industry. The project adopts a circular economy approach, aiming to drastically reduce waste, bring down CO<sub>2</sub> emissions and reduce environmental damage, while ensuring construction demands can be met.

Ashraf has been awarded two Visiting Professor grants from the Royal Academy of Engineering with Mr James Wardman (2021-2024) and Mr Peter Debney (2016-2019), both from Ove Arup & Partners Ltd, aiming to enhance the teaching and learning as well as the employability and skills of Bradford students whilst strengthening external partnerships with industry. He also won four final year/MSc project grants from IStructE to enhance the student learning experience during their final year projects.



### Current research interests:

- Development of sustainable construction materials
- Demountable reinforced concrete structures
- Geopolymer concrete
- Multi-functional concrete: self-compacting concrete, self-sensing, self-healing and self-heating concretes.
- Nanomaterials and nanofillers in concrete.

### Research projects:

- Newton Prize 2020, 'Efficient Recovery of Valuable Resources from Construction and Demolition Waste Towards Circular Economy in Construction Industry'
- H2020-MSCA - 'Construction and Demolition Waste-based 'Green' Lego-like Structural Components'
- Newton Fund Institutional Links, Hacettepe University, Turkey, 'Lego Construction System of 'Green' Structural Components for Low-cost Housing'
- Geopolymer reinforced concrete T-section beams, PhD.

# Research and Knowledge Transfer

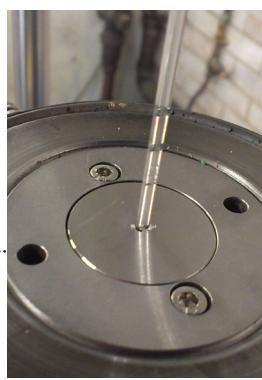
## Projects submitted:

- Adopting Circular Economy Business Model for Resource efficiency in ICT industry (ACE4ICT), Dhaval Thakker/ Savas Konur
- Development of an innovative business toolkit for microbusinesses using Artificial Intelligence and Information-driven Expert Systems, Daniel Neagu/Amr Abdullatif
- Grind of Sodium Polyacrylate to 25 micron size, Raj Patel/ Yakubu John
- Fosroc material extrusion, Adrian Kelly



## Open calls for funding:

- [Biomedical catalyst 2021: early and late-stage awards](#), Closing date: 26 August 2021 11:00 UK time
- [Digital technologies for health and care](#), Closing date: 21 July 2021 16:00 UK time
- [Expression of interest: Automotive Transformation Fund round 11](#), Closing date: 16 June 2021 11:00 UK time
- [Develop digital economy research communities with NetworkPlus](#), Closing date: 29 July 2021 16:00 UK



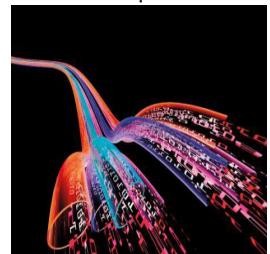
## Personal Research and Innovation Plans (PRIP)

Plans (PRIP) are designed to help us all plan for, and support, research across the University. Completing our PRIPS gives us all the opportunity to reflect on our research and help us develop plans for the future.

Staff can use their plan to help inform both the Workload Model and Performance Development Review discussions as well as being part of the Bradford Academic Career Journey.

Deadline - 9th July 2021.

Fill in your PRIP [here>>](#)



# Staff and Students' news

## Why 'Internet of Things' will fuel next tech revolution

Dr Dhaval Thakker talked about how advances in artificial intelligence and the 'internet of things' will change our lives, and how the next iteration of mobile connectivity (essentially the jump from 4G to 5G) will be nothing short of transformative, changing not only the way we communicate with one another but dragging previously technologically inert 'things' (fridges, cars, cameras, even buildings and entire cities) into the '5.0' world, where both they and we benefit from a series of connections, sometimes to each other and increasingly to parallel networks.

More [here>>](#)

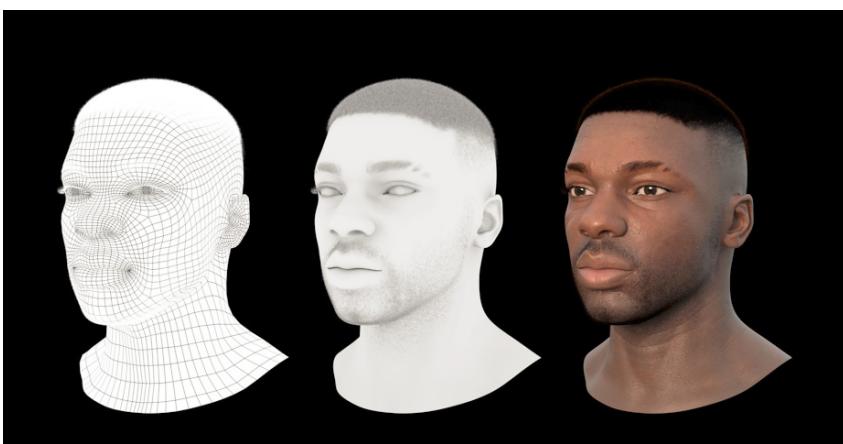


## Scholarships will help mould filmmakers with global vision

Filmmakers are being offered the chance to apply for scholarships as part of the University of Bradford's relaunched Filmmaking MA, developed in partnership with UNESCO (United Nations Educational, Scientific and Cultural Organization). There are three £5,000 scholarships for qualified full-time international applicants and five £2,000 scholarships for qualified full-time home applicants.

Students from the UK and abroad are invited to apply.

More [here>>](#)



## Framestore uses Deep Fake technology for anti-knife campaign

Kiyan Prince, a football prodigy, tragically died after being stabbed at the age of 15 in May 2006 whilst trying to prevent another child from being bullied.

Professor Hassan Ugail used state-of-the art aging-projection software to create a scientifically accurate image of how Kiyan would look today. Once completed Framestore set about creating the suite of images to accompany the anti-knife campaign.

More about this [here>>](#)



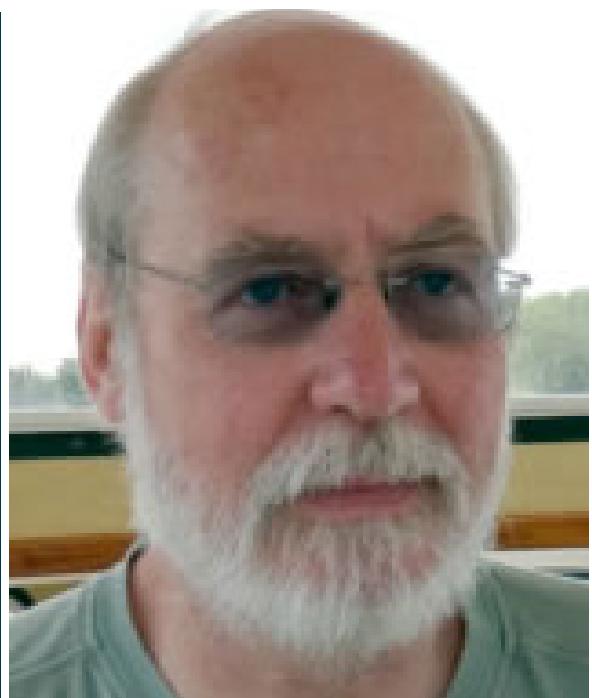
# Staff and Students' news

## Bradford and Cardiff team work on polymer reinforcement

As part of an [EPSRC project](#) with Cardiff, Cambridge and Bath, Prof John Sweeney, Dr Cristina Tuinea-Bobe and Glen Thompson are working on Tetrahedral elements (tets) that are injection moulded from glass-filled polymers and used for concrete reinforcement. The tets are placed into the concrete mix during the casting operation, which makes the technology easy to handle and operate on site.

The geometry of the tets prevents them from forming stacks and creating potential crack planes. They can be randomly mixed with the concrete paste without affecting the fresh properties of the concrete. Preliminary results have shown that the technology provides a significant level of crack suppression and induces ductile behaviour into the material. There is potential to replace the conventional steel reinforcement.

This is in effect a crack control system that is suitable for several applications, from foundation construction, to bridges and geotechnical infrastructures.



## EDMA-2021

This 4th EDMA International Workshop calls for industry and academic experts and researchers working across the computing and engineering divide to share their views, experiences and best practices on the use of knowledge discovery and computational science and engineering models, to handle processing systems complexity, including big data analytics, in industrial, engineering, cyber-physical systems, industry 4.0 and related domains.

[More here>>](#)



## Engineering and Archaeology academics work on 'Revealing Bradford' project

Dr Jaan Pu is working in a multidisciplinary team on '[Revealing Bradford](#)', a project co-funded by NERC and AHRC, planning to develop relationships within the City of Bradford (EU funded blue-green infrastructure initiative in historic Horton Park and immersive 3D mapping of the City Centre), and establish new partnerships across the heritage sector, community groups, academia and public agencies to consider how communities and individuals within a complex multi-ethnic Yorkshire city use, value and benefit from blue-green spaces and watercourses.

The planned collaboration will include a range of voices: environmental scientists, health researchers, historical ecologists, archaeologists and historians. The project will bridge different perspectives, knowledge and uses of urban environments and their hidden heritages, recognising that histories and heritage are dynamic and plural.

# Staff and Students' news

## Individual training session for Research Information System

The Research Information System (RIS) is part of the The Research Infrastructure and Support project IRIS to support the University's strategy to become a world leader in the creation of knowledge through fundamental and applied research.

RIS allows you to create, edit and personalise your public academic profile, and submit any publications directly into the Bradford repository. Furthermore, RIS is the avenue to subject research projects, for costing as well as for getting approval confirmed.

RIS can be accessed [here>>](#)

One-to-one training sessions will be available from 1st June, please book with Dr Cristina Tuinea-Bobe if you need help to master the RIS system.



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

Dr Kavian Cooke spoke at the forum about his work on Transient liquid phase bonding of high-performance alloys and composites.

Dr Cristina Tuinea-Bobe gave a presentation on the available funding opportunities and the avenues to apply.

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 16 June 2021, 12 noon, followed by a 'Shut-up and Write' session.



## New Staff Hafiz Rauf



Hafiz Tayyab Rauf received his bachelor's and master's degrees in computer science from the University of Gujarat, Pakistan. He is currently working as a Research Assistant in the Department of Computer Science.

He is also a Visiting Researcher at the Centre for Smart Systems, AI and Cybersecurity, Staffordshire University, Stoke-on-Trent. He is the author of more than 25 research articles published in reputed journals. His research interests include evolutionary computing, swarm intelligence, neural networks, image processing, computer vision, and machine learning. He is a reviewer of various high-impact factor journals. This is in effect a crack control system that is suitable for several applications, from foundation construction, to bridges and geotechnical infrastructures.

# Staff and Students' news

## Dr Nejat Rahamanian outreach activity

Dr Nejat Rahamanian was invited by National University of Science and Technology in Oman, to deliver a keynote lecture 'Recent Trends in Engineering Research'. The event was held virtually on 23 May 2021, with attendees of academia, students and expert from oil/gas/water industries in Oman. There were four keynote lectures from different time zones: Malaysia, UK and Canada, focused on aspects of energy storage, water, climate change, and reliability assessment with the focus on latest trends in engineering research.

Nejat has also delivered an oral presentation on 'Climate Changes and the Way Forward' by addressing impact of this challenge, not only in industry but also in higher education. Nejat has stressed that the traditional era of 'Linear Economy' is over "and we will have to nurture the new generation by embedding Circular Economy in the curriculum by re-designing, re-use and recycling waste to energy for a sustainable growth". Nejat has also focused on the direct relationship of CO<sub>2</sub> pollution and GDP in Oman in the last decades, and stated that de-coupling of economy growth and CO<sub>2</sub> emission is vital. His talk received very positive feedback from audience. Prof Syed Rizwan, Chair of Research and Innovation Committee at College of Engineering at NUS, acknowledged Nejat's contribution to the event, and he concluded that "this definitely, will give us an insight and a way forward".



The banner for the 'Symposium on Recent Trends in Engineering Research' organized by the National University of Science & Technology, Oman. It features the university's logo, the title 'Symposium on Recent Trends in Engineering Research', the date '23rd May 2021', the platform 'Webex Events', and a link. A photo of Dr. Nejat Rahamanian is on the right.

**Symposium on Recent Trends in Engineering Research**

Date: 23<sup>rd</sup> May 2021  
Platform : Webex Events  
(Link: <https://cutt.ly/bWN6sz>)

**Keynote - 2 | 10.45am-11.35am (7.45am-8.35am UK time)**  
**Dr. Nejat Rahamanian**  
University of Bradford, UK  
Topic: Climate change and the way forward

## Opportunity for staff - get involved in the WTUN's Climate Action Student Hackathon

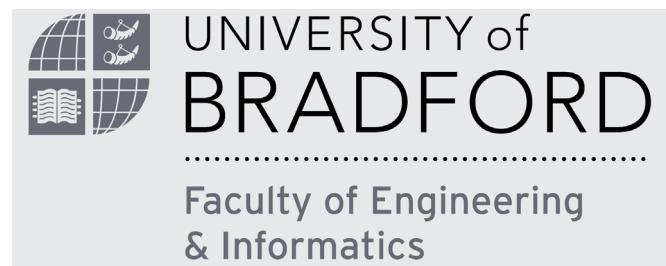
The World Technology Universities Network (WTUN) are pleased to announce that they are launching their first International Student Hackathon for Climate Action and are looking for speakers and contributors from the University of Bradford to get involved.

A 48-hour sprint event where teams of students will be given the chance to address an issue around Climate Action and come up with a new product or service to solve a climate change problem, either locally, nationally or internationally.

Over the 48 hours students will be given a number of tasks alongside a schedule of masterclasses to help them develop their product/service, enhance their skills and complete the tasks. This will all guide them into creating a final pitch presentation to a panel of experts who will pick a winner.

More [here>>](#)





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