UKIERI
UK-India Education and Research Initiative

सत्यमेव जयते
Department of Science & Technology Govt. of India

S No	Workshop title	Workshop research area	Lead Universities
1	Big Data Analysis and Precision Medicine	The workshop focusses on the "Affordable and Preventive Health Care" research theme and will target groups that contribute to the rapid discovery, development and deployment of low-cost point of care diagnostics. This pipeline comprises activity from clinical groups, Mass spectrometry-based Proteomics, Big data analytics and mining for biomarker discovery, diagnostic model development and point of care device development and manufacture. The flow of the workshop will follow a path from clinic to mass spectrometry to data analytics to diagnostic device back to the clinic	Nottingham Trent University and Indian Institute of Technology Bombay
2	Solar pump-based village microgrids – potential for tackling the energy/water/food nexus in Punjab	This workshop will bring together scientists, engineers, economists and political scientists to develop projects that can work in a trans-disciplinary manner to address pressing issues within the so-called energy/water/food nexus. The research aim of the workshop is to bring together a range of early career researchers guided by senior mentors to develop sound proposals for identifying and addressing barriers to the required uptake of solar pumps.	Birmingham City University and University Institute of Engineering & Technology, Panjab University
3	WEIGH (Water security assessment of Indian rivers originating from the Himalayas)	Learning relationship between anthropogenic climate change, human intervention, and natural variability of river systems is necessary to predict the future water security under various climate projections. This is the focus of the proposed workshop and we aim to recognize important gaps in the contemporary research, a robust plan to fill those gaps, and define the path going forward. This workshop will help researchers from both the countries to come together to identify focus areas and develop grant proposals and research projects that will influence water management policy and thud lives of millions of people.	University of Bristol and Indian Institute of Technology Bombay
4	Medical Additive Manufacturing: Cost-effective and Sustainable Solutions for Innovative Development of High-value Added Products and Services	This workshop aims to create fruitful collaborative networks between the UK and India in Medical Additive Manufacturing (Medical AM) which is the rapidly expanding technology that directly enhances life quality of people via innovative products for medical diagnostic, treatments and rehabilitation. The workshop will open potentials for transnational higher education and research between the UK and India, aiming to identify local needs and investigate sustainable and cost-effective solutions, to meet well these needs, reducing the cost of high-value added medical products and health services by up to 50%, including biomodels, implants, surgical tools, orthotics and prosthetics, as well as related telehealth and e-healthcare services	University off Greenwich and Lovely Professional University

5	Urbanization and resilience against natural and man-made disasters	Developing a roadmap to build resilient cities in India, this scientific workshop will address the aspects of structural resilience of building and critical infrastructure such as bridges, airport etc. The theme of the proposed workshop i.e. resilient structures has a tremendous potential to impact the economic development and well-being (quality of life) in the cities of both India and UK. It will also help governments and policy makers to meet SDG measures of the UN program. The workshop will be multi-disciplinary, where researchers specializing in structural engineering, architecture and other aspects of built environment will discuss the challenges of resilience in structures during the rapid urbanization.	University of Wolverhampton, UK and Indian Institute of Technology, Delhi
6	AI, Cyber Risks and Data Science for FinTech and Digital Economy	The workshop will bring together a multidisciplinary consortium of leading computer and data scientists with economist/management strategists from UK and India. The exchange of ideas will lead to collaborations on new impactful research and academic publications, along with capacity building by providing a platform to early career researchers in this domain.	University of Essex and Indian Institute of Management, Ahmedabad
7	Exploiting Machine Learning for Multiscale Modelling of Materials (EMLM^3)	The workshop will promote a novel UK-India discussion of applications of machine learning in multiscale modelling of materials. With the increasing complexity of emergent materials, predictive structure-property correlation models require mechanistic understanding across a wide range of space and time scales. The proposed workshop would bring the researchers from both streams together to start a discussion on the development of newer methods for ever challenging problems in materials science and engineering	University of Warwick and Indian Institute of Engineering Science and Technology, Shibpur, West Bengal
8	Sustainable cooling technologies and energy efficiency	The workshop will focus on sharing of the complementary technologies such as the impact of HVAC&R systems on climate change as well as global warming, decarbonizing cooling technologies, and energy efficiency in HVAC&R systems in India and the UK.	Coventry University and Nagarjuna College of Engineering and Technology
9	Workshop on Adversarial Cyber Security	This workshop aims to involve government officials, industry practitioners, and academia in understanding adversarial cognition, cyber-defence strategies, and game-theoretic and machine-learning tools and techniques towards cybersecurity. In particular, the workshop will involve a discussion on adversarial cognition (one adversary versus several adversaries), cyber-defence strategies like the use of deception and intrusion detection systems, and game-theoretic and machine-learning tools and techniques for countering cyber-attacks. Overall, this workshop aims to impart knowledge about adversarial cognition, cyber-defence strategies, and game-theoretic and machine-learning tools and techniques. The workshop will provide an opportunity to discuss different challenges that defenders, end-users, and attackers confront in the area of cybersecurity.	London Metropolitan University and Indian Institute of Technology Mandi

10	Engineering Privacy Aware Urban Scale Cyber Physical Systems	The workshop has three key themes to facilitate the design and development of usable urban scale cyber physical systems. These themes are extremely important to explore for building a “smart” future. Furthermore, they are diverse and nascent enough that a workshop encompassing multiple researchers will help to identify core research questions and greatly boost the development of urban scale technologies in both India and UK.	King's College London and Indian Institute of Technology Kharagpur
11	Industrial utilization of indigenous rapid-growing algae	The workshop will enable researchers of both India and UK to explore new industrial avenues making use of new species of algae as a means to solve eutrophication, overcome the energy crisis, new resources for food, feed and nutraceuticals and help control of global warming. Ultimately, it will promote better research and industrial collaboration between the two countries in algae towards greater global benefits.	Swansea University, UK and Mahatma Gandhi University
12	GREEN SOIL – The Sustainable Option for Infrastructure Growth	The project proposes a novel approach of (re)using agriculture waste in geotechnical infrastructure projects as an admixture with soil which will result in a sustainable use of agriculture waste (GREEN SOIL is soil admixed with agriculture waste ash). This will: (i)reduce waste, and (ii)result in use of less soil, which, in turn will: - result in a massive saving upon the costs of soil, - result in a massive saving upon the costs of equipment for digging and transporting soil, - result in reducing the carbon footprint of a given geotechnical infrastructure project.	University of Manchester and Indian Institute Of Technology (ISM) Dhanbad, Jharkhand, India
13	Workshop on Prediction and Mitigation of Performance Loss in Photovoltaic Systems due to Degradation and Soiling of Solar Modules	The aim of the workshop is to develop methodologies for the evaluation of degradation rates and useful life span of PV modules and durable anti soiling coatings, including methodologies to test durability. The workshop would bring together researchers from India and UK with experience in these fields and aim to develop joint project proposals.	Loughborough University and Indian Institute of Technology Bombay
14	Photonic Devices for Affordable Healthcare for Individuals and Communities	The aim of the workshop is to explore the role new technological developments in photonics and healthcare devices based on optical measurements can play in being able to provide affordable solutions at both the individual and community level.	University of Southampton, UK and Indian Institute of Technology Delhi
15	Water for all: Addressing issues surrounding water quality, quantity and wastewater treatment in India	This workshop will focus on developing a deep understanding of the current pressures India faces in terms of assuring its water quality, quantity and sustainable management for future generations. Via the involvement of carefully selected mentors and Early Career Researchers (ECRs) from UK and India, which cover a broad range of research backgrounds (e.g. geology, freshwater ecology, geochemistry, civil engineering and mathematical modelling), our workshop will address a multitude of inter-related themes including health and sanitation, water quality indices, water resource modelling, groundwater contamination, microplastics and monitoring of industrial and agricultural pollutants. The outputs from this workshop will be to foster new international, long-standing, collaborative networks, which will work, with key local stakeholders, towards a sustainable future of clean water and sanitation for all.	University of Nottingham, UK and Assam Agricultural University

16	Conversion of anthropogenic carbon dioxide into useful chemicals/fuels and water to hydrogen using sunlight	The workshop will bring scientists from India and UK together to discuss the research and development of materials capable of converting carbon dioxide (CO_2) into useful chemicals/fuels and water to hydrogen by the assistance of sunlight. This workshop will serve as a forum for coordinating efforts towards common goals in this area, as well as a platform to discuss shared funding initiatives.	University of Southampton and Jawaharlal Nehru Centre for Advanced Scientific research