

BSE NEWSLETTER

DEC 2019



Dear Friends of BSE and PolyU

I wish to thank you for your kind concern for us while we negotiated some of the unforeseen challenges we faced recently. We hope to be functioning normally very soon. Despite the challenges 2019 was a very good year for BSE with many significant achievements that we would like to make you aware of through this newsletter. We would love to hear from you if you'd like to know more about any of the items in the newsletter.

I would also like to take this opportunity to wish you a very happy and prosperous new year 2020.

Asif Usmani
Professor and Head of the Department

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(I) POLYU IN THE TOP 100 OF QS RANKING OF WORLD UNIVERSITIES

In the latest QS (Quacquarelli Symonds) World University Rankings 2020, PolyU was ranked 91st, up from last year's position of 106th, as a result of its outstanding academic and research achievements. In Asia alone, PolyU was ranked 24th. According to the QS World University Rankings by Subject 2019, the Faculty of Construction and Environment (FCE) has 2 disciplines in the top 20. **Architecture/ Built Environment was ranked 20th**, while **Civil and Structural Engineering 15th**. BSE contributes strongly to both of these subject rankings.

(II) BSE TEACHING AND RESEARCH ACHIEVEMENTS/ACTIVITIES

RGC Theme-based Research Scheme 2019/20: BSE became the only the second department in PolyU to be awarded its first RGC Theme-based Research Scheme (TRS) grant of HK\$33.333 million for a project entitled "SureFire: Smart Urban Resilience and Firefighting." Led by Prof Usmani (Head of BSE) as project coordinator, this project will address the key scientific challenges of smart firefighting and emergency response and thereby enabling forecasting of critical events in a fire scenario to help make urban infrastructure more resilient to the fire hazards. The project is expected to last for 5 years, from 1 January 2020 to 31 December 2024. This is the third FCE project that has been funded consecutively by RGC TRS.



Joint Low-voltage Innovation Laboratory: A signing ceremony for a Joint Low-voltage Innovation Laboratory between the Futian Power Supply Bureau (FPSB) and PolyU was held in August 2019 in Shenzhen. Addressing local concerns for safety and disaster prevention in electricity distribution and utilization, the laboratory will focus research on the key technologies of safety and reliability in the low-voltage power grid. It will serve as a model of collaboration between Hong Kong and Shenzhen in production, education, and research. Prof. Yaping Du and Prof. Mingli Chen from BSE and representatives from FPSB and Shenzhen Power Supply Bureau (SPSB) were present. SPSB awarded RMB2,750,000 to Prof. Du for the initial phase of the lab development in July 2019.

Excellent Results of RGC Competitive Funding Schemes 2019/20: The 2019/20 application results for the RGC General Research Fund (GRF) and Early Career Scheme (ECS) were announced on 28 June 2019. **BSE achieved a success rate of 58%**. Based on average funding per academic staff member (only counting those who are eligible), BSE was the best performing department in FCE for this round of GRF. Success for ECS was 100% (2 out of 2).

Dept.	GRF grants	ECS grants	Total	Overall success rate	Total amount (HK\$)	Amount per staff member (HK\$)
BSE	9	2	11	58%	\$7,238,514	\$329,023

Hong Kong Scholars Programme 2019: Dr. Fu Xiao of BSE was selected by the Hong Kong Scholars Programme (HKSP) 2019 to each engage a mainland scholar as a Postdoctoral Fellow in her research project "Mining Massive Data Sets in Building Automation System for Improving Building Operational Performance." Launched in December 2010 as a joint initiative between mainland authorities and the Society of Hong Kong Scholars, the HKSP promotes academic/ scientific exchanges and collaboration by matching outstanding mainland PhD graduates with leading academics of universities in Hong Kong.

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ITF Funding for BSE Academic: Prof. Hong-xing Yang of BSE was awarded HK\$2,389,700 from the Innovation and Technology Fund (ITF) for a 2-year project entitled “Research and Development of a Novel Inline Bidirectional Turbine for Water Supply Pipes.” Prof. Lu Lin Vivien of BSE was also awarded HK\$1,268,450 from the Innovation and Technology Fund (ITF) for a 2-year trial scheme project entitled “Development and optimization of the novel transparent heat insulation nano-coating and its application on local building glazing façade”.

National award: Prof. Lu Lin and Prof. Yang Hong-xing of BSE have received 2nd class innovation award of Ministry of Education of China 2019 on radiative heat transfer based building energy saving and thermal comfort, together with their team from Hunan University and Zhuhai IGreenbuy 2019 年度教育部高等學校科學研究優秀成果獎（科學技術）科學技術進步獎二等獎

Accreditation of BSE programmes: Subsequent to the visit by the accreditation panel on 29 and 30 November 2018 and accreditation board meeting on 16 April 2019, the Hong Kong Institution of Engineers (HKIE) has granted full accreditation to BEng (Hons) in BSE, valid for 5 years for all intake classes up to and including the year 2022. Graduates of accredited programmes will be qualified to apply for HKIE membership after gaining appropriate training. A panel of the Royal Institution of Chartered Surveyors (RICS) visited PolyU for accreditation of the BSE MSc programme in Facility Management in June 2019 and recommended that the programme would be accredited for another five years.

(III) ACADEMIC'S ACHIEVEMENTS

Faculty Awards for Outstanding Performance/ Achievement 2018/19: Prof. Asif Usmani, (Head BSE), was given the FCE award for winning an RGC TRS grant of over HK\$33 million at his first attempt. Dr Joseph Lai was given the FCE award for outstanding teaching.



BSE Assistant Professor receives awards from IAFSS and HKIE: Dr. Xinyan Huang, Assistant Professor in BSE, will receive 2020 Proulx Early Career Award at the 13th *International Symposium of Fire Safety Science* in Waterloo, Canada. Dr. Huang is recognized for his research contributions that have impacted fire safety science and technology through: (1) pioneering understanding of smoldering wildfires by innovative experiments, (2) improving our understanding of the flammability of materials and fire dynamics in the microgravity space environment, and (3) developing theories and techniques to understand the wire and cable fire and associated dripping phenomena. Dr Huang was also awarded HKIE Fire Division Fire Engineering Excellence Award 2019 (FEEA), for his paper, “Critical Drip Size and Blue Flame Shedding of Dripping Ignition in Fire.”

BSE Associate Professor Project wins Energy Project of the Year Award 2019: Dr. Joseph Lai of BSE contributed to a project that has been selected to receive The Association of Energy Engineers (AEE) Asia Pacific Rim Region Energy Project of the Year Award for 2019. “The Pioneering First Retro-Commissioning Energy Saving Project for Hong Kong Public Hospitals in Asia” recognizes the significance of hospital facility management from the research collaboration between Dr. Lai, the Hospital Authority, the Electrical and Mechanical Services Department, CLP Power and the Hong Kong Green Building Council.

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The President's Awards for Excellent Performance/Achievement 2017/18: Prof. Shengwei Wang of BSE received the President's Award for Service in a ceremony in April 2019.



Gold Medal for an Indirect Evaporative Cooler: At the 47th International Exhibition of Inventions of Geneva in April 2019, Prof. Hong-xing Yang of BSE and his teams received 2 gold medals for their inventions. One of them for an indirect evaporative cooler (IEC) for efficient energy recovery. Consisting of alternating dry and wet channels, the IEC uses exhaust air and water evaporation to pre-cool fresh air for central air-conditioning systems of buildings.

BSE Professors named Highly Cited Researcher by Clarivate Analytics for 2018: Prof. Hong-xing Yang and Prof. Vivien Lin Lu of BSE are in Clarivate Analytics' List of Highly Cited Researchers 2018 for their exceptional impact in the field of Engineering. The list recognises leading researchers in sciences and social sciences whose academic papers published during 2006-2016 were ranked in the top 1% in terms of the total number of citations in one or more fields according to *Clarivate Analytics Essential Science Indicators*.

BSE Scholar Promoted to Editor of Top Energy Journal: Prof. Hong-xing Yang of BSE was promoted to editor of the *International Journal of Applied Energy* by Elsevier after serving the journal as associate editor for many years. A top Science Citation Index (SCI) journal in the field of energy applications, the journal's current Impact Factor is 8.426, ranking 1/168 in the Category of Engineering (Subcategory: Building and Construction) by CiteScore and 7th among 579 SCI journals in Engineering released by ESI statistics recently.

Best Paper Award for BSE Researchers: BSE researchers received the Best Paper Award at the "One Belt-One Road" Forum of Evaporative Air-conditioning Key Technologies in Xi'an organized by the Industrial Association of Chinese Manufacturers of Air-conditioners and Xi'an Polytechnic University. Co-authored by Dr Yi Chen, Ms Yunran Min, and Prof. Hong-xing Yang, the paper was entitled "Experimental studies on indirect evaporative coolers for energy recovery of air-conditioning systems in hot and humid regions."

(IV) STUDENTS' ACHIEVEMENTS

CIE Hong Kong Outstanding Student Lighting Project Award 2019: BSE student Mr. WONG Yat Kuen, was awarded an "Outstanding Student Lighting Project Award" by the International Commission on Illumination (CIE) Hong Kong at the Annual General Dinner. Mr. WONG's final-year project was supervised Dr. Minchen, Tommy WEI of BSE.



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MEng Student Won 1st Prize in National Competition: MEng in BSE student Miss Chen Qingxin, won 1st prize in the 13th Chinese National Competition (South China Region) for college students majoring in Refrigeration and Air-conditioning held in Guangzhou in June 2019. She worked under the supervision of Prof. Deng Shiming of BSE.

The 5th Hong Kong University Student Innovation and Entrepreneurship Competition: BSE students, Mr. Leung Chun Kuen, Mr. Chan Kin Chi, Ms. Leung Wing Yi and Ms. Lam Nico, received the 3rd Prize in the category of Energy, Environmental and Chemical Engineering at the 5th Hong Kong University Student Innovation and Entrepreneurship Competition under the supervision of BSE Professor, Prof. Lu Lin Vivien. The team's winning project was "*Optical and thermal performance analysis of aerogel glazing technology in a commercial building of Hong Kong*".

BSE Students receive HKIE Outstanding Student Award: Leung Chun Kuen, Li Haiwei and Chan Chun On, were awarded The Hong Kong Institution of Engineers – Building Services Division (HKIE-BSD) Outstanding Student Award in 2018/19 so as to recognize their good academic results studying a bachelor degree or higher diploma in Building Services Engineering together with proven records of extra-curricular activities.

(V) INTERNATIONAL CONFERENCES ORGANIZED BY THE DEPARTMENT

Eurasian OpenSEES Days on 20 and 21 June 2019: The first Eurasian Conference on the Open System for Earthquake Engineering Simulation (OpenSEES) was held at PolyU in June 2019 as a platform for scholars and engineers from all over the world to share the latest computational tools for complex structural engineering analysis and design. The conference consisted of over 40 presentations, including 3 keynote speeches from leading academics: Prof. Filip Filippou of the University of California at Berkeley, Prof. Xinzheng Lu of Tsinghua University, and Prof. Giorgio Monti of La Sapienza University of Rome. Attracting over 130 participants, the conference provided an overview of the latest developments made on the OpenSEES framework. The conference was preceded by a user and a developer workshop.



11th Asia-Pacific International Conference on Lightning: The 11th Asia-Pacific International Conference on Lightning was held at PolyU in June 2019 as a platform for scientists, engineers and academics to share their research and explore the latest technology for lightning monitoring, detection and protection, the conference drew 210 participants from 27 countries. The conference chair was Prof. Ya-ping Du of BSE. More than 170 papers were presented at the conference.

Current Vacancies in BSE

Research Assistant Professor in Building Energy / Building Environment / Building Safety and Resilience (several posts) (Ref. 19110410)
Please see <https://www.polyu.edu.hk/hro/postspec/19110410.pdf> for details.

The SureFire (Smart Urban resilience and Firefighting) Project is looking for applications for Post-doctoral Researchers and PhD Students in the area of computational simulation of large scale infrastructure fires and AI and machine learning applications in forecasting critical events in large scale fire scenarios. Please see <https://www.bse.polyu.edu.hk/PolyUFire/> for details.