Curriculum Vitae

Personal Information

Muhammad Imran

College of Engineering and Applied Science, Aston University, B4 7ET, Birmingham, United Kingdom

(+44) 7367883119

m.imran12@aston.ac.uk

https://research.aston.ac.uk/en/persons/muhammad-imran

Skype: imran.ust

Personal Profiles

- https://research.aston.ac.uk/en/persons/muhammad-imran
- https://www.researchgate.net/profile/Muhammad_Imran104
- https://orcid.org/0000-0002-3057-1301
- https://www.linkedin.com/in/muhammad-imran-2527a9a0/
- https://scholar.google.com/citations?user=RxQ_MEMAAAAJ&hl=en&authuser=3

Education

01/09/2012–19/02/2016 — PhD Energy System Engineering — EQF level 8
University of Science and Technology (UST), Daejeon, South Korea

15/10/2009–15/04/2012 — MS Thermal Power Engineering — EQF level 7
University of Engineering and Technology (UET), Lahore, Pakistan

10/08/2005–15/09/2009 — BS Mechanical Engineering — EQF level 6
University of Engineering and Technology (UET), Lahore, Pakistan

Pedagogical

Nov 2019-Jul 2021	PGCert in Teaching and Learning	Aston University, UK
16-20 April 2018	Student Cantered Learning	DTU, Denmark
04-06 July 2016	Faculty development Programme	HEC, Pakistan
18-23 April 2016	Teaching Methods and Course Design	UMT, Pakistan
4-7 March 2013	Effective Teaching Tools	UST, South Korea
25-27 June 2012	Student Development Project	UCP, Pakistan

Work Experience

10/06/2019–Present — Lecturer/Assistant Professor

Aston University, Birmingham, United Kingdom

- Teaches appropriate, assigned undergraduate and graduate engineering courses, including discipline-specific renewable/sustainable energy engineering modules.
- Pursue, develop and lead research, innovation and impact at an appropriately benchmarked level in the area of advance energy technology.
- Guide, lead and mentor students in research projects at both graduate and undergraduate level in the area of renewable energy, thermofluids, and thermal engineering.
- Undertake the development, training and administrative duties as assigned by the line manager and/or the Senior Executives, appropriate to the grade of the position

Courses taught:	ME023 Energy Efficiency; ME1502 Prototyping and Development
No. of students	+250 students
Supervision	1 MS Thesis , 14 BSc Final Year Project

01/05/2017–30/04/2019 — Marie Curie Individual Postdoc Fellowship

Technical university of Denmark (DTU), Copenhagen, Denmark

- Successfully completed the EU funded project (MSCA_IF Fellowship) to develop a nonlinear model predictive controller for a mini organic Rankin cycle unit, which recover waste heat from internal combustion engine of heavy-duty vehicle.
- Coordinate and meeting with stakeholders (Scania Sweden, SMU USA, Liege Belgium) and EU Commission for successful completion of the project.

- Engage in the dissemination of the results (workshop, seminar, and conference/journal papers) to general public as well as internal and external parties.

Courses taught:	Thermodynamics, Heat Transfer
No. of students	50 students
Supervision	2 MS Thesis, 1 Final Year Project, 2 PhD (Co_supervisor)

24/03/2016–24/04/2017 **Assistant Professor**

University of Management and Technology (UMT), Lahore, Pakistan

- To teach and assess, in Mechanical engineering, as part of a teaching team within the School of Engineering where appropriate, across other Faculties of the University.
- To undertake operational responsibilities associated with the delivery of academic provision including the leadership of modules.
- To pursue enterprise and research activities which enhance the external revenue of the University and to deliver various forms of consultancy and other services as determined by the relevant academic manager.

Courses taught:	Thermodynamics, Fluid Mechanics
No. of students	80 students
Supervision	1 MS Thesis, 1 PhD (Main Supervisor), 6 BSc Final Year Project

01/09/2012–21/02/2016 **Research Assistant**

Korea Institute of Energy Research (KIER), Daejeon, South Korea

- Conduct literature reviews of the research projects based on national and international R&D status.
- Preparing research proposal, research protocols, project reports and relevant documents
- Post processing and analysis of experimental data, summarize the results.
- Performs various editorial duties; writes, reviews and edits various materials for publication.

Courses Taught:	Thermal Energy Systems, Power Plant
No. of Students	10-15 students
Thesis Supervision	2 MS Thesis

01/07/2010–15/08/2012 **Lecturer**

University of Central Punjab (UCP), Lahore, Pakistan

- Preparation and delivery of lectures, seminars and tutorials to undergraduate students.
- Carrying out administrative tasks related to the department under supervision of head HOD.
- Provide proper guidelines and assist, where required, to students for practical exercises.

Courses Taught:	Basic Mechanical Engineering, EngineeringMechanics
No. of Students	40 students
Thesis Supervision	14 BSc Final Year Projects

Peer Reviewed Publications

Research profile summary

Total No. of Publications: 70+ Citations: 1452 h-index: 18 i-10 index: 25

Selected Journal Publications (SCI/SCIE Indexed)

1. Imran, Muhammad, Roberto Pili, Muhammad Usman, and Fredrik Haglind. "Dynamic modeling and control strategies of organic Rankine cycle systems: Methods and challenges." Applied Energy 276 (2020): 115537.
2. Alvi, Jahan Zeb, Yongqiang Feng, Qian Wang, Muhammad Imran, Lehar Asip Khan, and Gang Pei. "Effect of Phase Change Material Storage on the Dynamic Performance of a Direct Vapor Generation Solar Organic Rankine Cycle System." Energies 13, no. 22 (2020): 5904.
3. Usman, Muhammad, Muhammad Imran, Fredrik Haglind, Apostolos Pesyridis, and Byung-Sik Park. "Experimental analysis of a micro-scale organic Rankine cycle system retrofitted to operate in grid-connected mode." Applied Thermal Engineering 180 (2020): 115889.
4. Muhammad, Hafiz Ali, Haider Sultan, Beomjoon Lee, Muhammad Imran, Hyun Baek, Young-Jin Baik, and Sung Chan Nam. "Energy minimization of carbon capture and storage by means of a novel process configuration." Energy Conversion and Management 215 (2020): 112871.
5. Sahto, Muhammad Punhal, Wang Wei, Linshan He, Muhammad Imran, Li Hai, and Gong Weiwei. "Modelling and Simulation of Aerostatic Thrust Bearings." IEEE Access (2020).
6. Abam, Fidelis, Ogheneruona E. Diemuodeke, Ekwe, Mohammed Alghassab, Olusegun D. Samuel, Zafar A. Khan, Muhammad Imran, and Muhammad Farooq. "Exergoeconomic and Environmental Modeling of Integrated Polygeneration Power Plant with Biomass-Based Syngas Supplemental Firing." Energies 13, no. 22 (2020): 6018.
7. Zhang, Yeqiang, Biao Lei, Zubair Masaud, Muhammad Imran, Yuting Wu, Jinping Liu, Xiaoding Qin, and Hafiz Ali Muhammad. "Waste Heat Recovery from Diesel Engine Exhaust Using a Single-Screw Expander Organic Rankine Cycle System: Experimental Investigation of Exergy Destruction." Energies 13, no. 22 (2020): 5914.
8. Muhammad, Hafiz Ali, Hafiz Muhammad Abdullah, Zabdur Rehman, Beomjoon Lee, Young-Jin Baik, Jongjae Cho, Muhammad Imran, Manzar Masud, Mohsin Saleem, and Muhammad Shoaib Butt. "Numerical Modeling of Ejector and Development of Improved Methods for the Design of Ejector-Assisted Refrigeration System." Energies 13, no. 21 (2020): 5835.
9. Riaz, Fahid, Kah Hoe Tan, Muhammad Farooq, Muhammad Imran, and Poh Seng Lee. "Energy Analysis of a Novel Ejector-Compressor Cooling Cycle Driven by Electricity and Heat (Waste Heat or Solar Energy)." Sustainability 12, no. 19 (2020): 8178.

10. Haroon, Muhammad, Nadeem Ahmed Sheikh, Abubakr Ayub, Rasikh Tariq, Farooq Sher, Aklilu Tesfamichael Baheta, and Muhammad Imran. "Exergetic, economic and exergo-environmental analysis of bottoming power cycles operating with CO2-based binary mixture." Energies 13, no. 19 (2020): 5080.
11. Sattar, Abdul, Muhammad Farooq, Muhammad Amjad, Muhammad A. Saeed, Saad Nawaz, M. A. Mujtaba, Saqib Anwar et al. "Performance Evaluation of a Direct Absorption Collector for Solar Thermal Energy Conversion." Energies 13, no. 18 (2020): 4956.
12. Mir, Aneeque A., Mohammed Alghassab, Kafait Ullah, Zafar A. Khan, Yuehong Lu, and Muhammad Imran. "A review of electricity demand forecasting in low and middle income countries: The demand determinants and horizons." Sustainability 12, no. 15 (2020): 5931.
13. Lu, Yuehong, Mohammed Alghassab, Manuel S. Alvarez-Alvarado, Hasan Gunduz, Zafar A. Khan, and Muhammad Imran. "Optimal Distribution of Renewable Energy Systems Considering Aging and Long-Term Weather Effect in Net-Zero Energy Building Design." Sustainability 12, no. 14 (2020): 5570.
14. Lu, Yuehong, Zafar A. Khan, Manuel S. Alvarez-Alvarado, Yang Zhang, Zhijia Huang, and Muhammad Imran. "A critical review of sustainable energy policies for the promotion of renewable energy sources." Sustainability 12, no. 12 (2020): 5078.
15. Alvi, Jahan Zeb, Yongqiang Feng, Qian Wang, Muhammad Imran, and Junaid Alvi. "Modelling, simulation and comparison of phase change material storage based direct and indirect solar organic Rankine cycle systems." Applied Thermal Engineering (2020): 114780.
16. Asim, Muhammad, Saad Saleem, Muhammad Imran, Michael KH Leung, Syed Asad Hussain, Laura Sisó Miró, and Ivette Rodríguez. "Thermo-economic and environmental analysis of integrating renewable energy sources in a district heating and cooling network." Energy Efficiency 13, no. 1 (2020): 79-100.
17. Haroon, Muhammad, Abubakr Ayub, Nadeem A. Sheikh, and Muhammad Imran. "Exergetic performance and comparative assessment of bottoming power cycles operating with carbon dioxide–based binary mixture as working fluid." International Journal of Energy Research (2020).
18. Farooq, Muhammad, Ahsan Hamayoun, Muhammad Naqvi, Saad Nawaz, Muhammad Usman, Salman Raza Naqvi, Muhammad Imran et al. "Thermodynamic Performance Analysis of Hydrofluoroolefins (HFO) Refrigerants in Commercial Air-Conditioning Systems for Sustainable Environment." Processes 8, no. 2 (2020): 187.
19. Sher, Farooq, Kashif Hanif, Sania Zafar Iqbal, and Muhammad Imran. "Implications of advanced wastewater treatment: Electrocoagulation and electroflocculation of effluent discharged from a wastewater treatment plant." Journal of Water Process Engineering 33 (2020): 101101.
20. Sher, Farooq, Sania Z. Iqbal, Hao Liu, Muhammad Imran, and Colin E. Snape. "Thermal and kinetic analysis of diverse biomass fuels under different reaction environment: A way forward to renewable energy sources." Energy Conversion and Management (2019): 112266.
21. Wang, Shucheng, Zhitan Liu, Rasmus Cordtz, Muhammad Imran, and Zhongguang Fu. "Performance prediction of the combined cycle power plant with inlet air heating under part load conditions." Energy Conversion and Management 200 (2019): 112063.
22. Younis, Muhammad Rizwan, Muhammad Farooq, Muhammad Imran, Ali Hussain Kazim, and Aqsa Shabbir. "Characterization of the viscosity of bio-oil produced by fast pyrolysis of the wheat straw." Energy Sources, Part A: Recovery, Utilization, and Environmental Effects (2019): 1-16.
23. Arslan, A., Haji Hassan Masjuki, Moinuddin Mohammed Quazi, M. A. Kalam, Mahendra Varman, M. Jamshaid, SM Ashrafur Rahman et al. "Experimental investigation of tribological properties of laser textured tungsten doped diamond like carbon coating under dry sliding conditions at various loads." Materials Research Express 6, no. 10 (2019): 106444.
24. Wronski, Jorrit, Muhammad Imran, Morten Juel Skovrup, and Fredrik Haglind. "Experimental and numerical analysis of a reciprocating piston expander with variable valve timing for small-scale organic Rankine cycle power systems." Applied Energy 247 (2019): 403-416.
25. Imran, Muhammad, Fredrik Haglind, Vincent Lemort, and Andrea Meroni. "Optimization of organic Rankine cycle power systems for waste heat recovery on heavy-duty vehicles considering the performance, cost, mass and volume of the system." Energy (2019).
26. Farooq, M., M. A. Saeed, M. Imran, G. M. Uddin, M. Asim, H. Bilal, M. R. Younas, and J. M. Andresen. "CO 2 capture through electro-conductive adsorbent using physical adsorption system for sustainable development." Environmental geochemistry and health (2019): 1-9.
27. Almustapha, Muhammad N., Muhammad Farooq, Misbahu L. Mohammed, Muhammad Farhan, Muhammad Imran, and John M. Andresen. "Modification of acidic and textural properties of a sulphated zirconia catalyst for efficient conversion of high-density polyethylene into liquid fuel." Environmental Science and Pollution Research (2019): 1-11.
28. Farooq, Muhammad, Muhammad Asim, Muhammad Imran, Shahid Imran, Jameel Ahmad, and Muhammad Rizwan Younis. "Mapping past, current and future energy research trend in Pakistan: a scientometric assessment." Scientometrics 117, no. 3 (2018): 1733-1753.
29. Park, Byung-Sik, Muhammad Usman, Muhammad Imran, and Apostolos Pesyridis. "Review of Organic Rankine Cycle experimental data trends." Energy conversion and management 173 (2018): 679-691.
30. Ahmad, Jameel, Muhammad Imran, Abdullah Khalid, Waseem Iqbal, Syed Rehan Ashraf, Muhammad Adnan, Syed Farooq Ali, and Khawar Siddique Khokhar. "Techno economic analysis of a wind-photovoltaic-biomass hybrid renewable energy system for rural electrification: A case study of Kallar Kahar." Energy 148 (2018): 208-234.
31. Farooq, Muhammad, Muhammad Nurudeen Almustapha, Muhammad Imran, M. A. Saeed, and John M. Andresen. "In-situ regeneration of activated carbon with electric potential swing desorption (EPSD) for the H2S removal from biogas." Bioresource technology 249 (2018): 125-131.
32. Imran, Muhammad, Fredrik Haglind, Muhammad Asim, and Jahan Zeb Alvi. "Recent research trends in organic Rankine cycle technology: A bibliometric approach." Renewable and Sustainable Energy Reviews 81 (2018): 552-562.
33. Park, Byung-Sik, Muhammad Imran, Im-Yong Hoon, and Muhammad Usman. "Thermo-economic optimization of secondary distribution network of low temperature district heating network under local conditions of South Korea." Applied Thermal Engineering 126 (2017): 117-133.
34. Asim, Muhammad, Muhammad Imran, Michael KH Leung, NT Uday Kumar, Andrew R. Martin, and Faiza Kashif. "Experimental analysis of solar thermal integrated MD system for cogeneration of drinking water and hot water for single family villa in Dubai using flat plate and evacuated tube solar collectors." Desalination and Water Treatment 92 (2017): 46-59.
35. Imran, Muhammad, Nugroho Agung Pambudi, and Muhammad Farooq. "Thermal and hydraulic optimization of plate heat exchanger using multi objective genetic algorithm." Case studies in thermal engineering 10 (2017): 570-578.
36. Pambudi, Nugroho Agung, Maedanu Fasola, Lukad Valiant Perdana, Ria Laurensia, Danar Susilo Wijayanto, Muhammad Imran, and Lip Huat Saw. "Performance evaluation and optimization of fluidized bed boiler in ethanol plant using irreversibility analysis." Case studies in thermal engineering10 (2017): 283-291.

37. Rudiyanto, Bayu, IbnuAtho Illah, Nugroho Agung Pambudi, Chin-Chi Cheng, Reza Adiprana, Muhammad Imran, Lip Huat Saw, and Renanto Handogo. "Preliminary analysis of dry-steam geothermal power plant by employing exergy assessment: Case study in Kamojang geothermal power plant, Indonesia." Case studies in thermal engineering 10 (2017): 292-301.
38. Imran, Muhammad, Muhammad Usman, Youngmin Yang, and Byung-Sik Park. "Flow boiling of R245fa in the brazed plate heat exchanger: Thermal and hydraulic performance assessment." International Journal of Heat and Mass Transfer110 (2017): 657-670.
39. Usman, Muhammad, Muhammad Imran, Youngmin Yang, Dong Hyun Lee, and Byung-Sik Park. "Thermo-economic comparison of air-cooled and cooling tower based Organic Rankine Cycle (ORC) with R245fa and R1233zde as candidate working fluids for different geographical climate conditions." Energy 123 (2017): 353-366.
40. Usman, Muhammad, Muhammad Imran, Dong Hyun Lee, and Byung-Sik Park. "Experimental investigation of off-grid organic Rankine cycle control system adapting sliding pressure strategy under proportional integral with feed-forward and compensator." Applied Thermal Engineering 110 (2017): 1153-1163.
41. Imran, Muhammad, Muhammad Usman, Byung-Sik Park, and Youngmin Yang. "Comparative assessment of Organic Rankine Cycle integration for low temperature geothermal heat source applications." Energy 102 (2016): 473-490.
42. Imran, Muhammad, Muhammad Usman, Byung-Sik Park, and Dong-Hyun Lee. "Volumetric expanders for low grade heat and waste heat recovery applications." Renewable and Sustainable Energy Reviews 57 (2016): 1090-1109.
43. Usman, Muhammad, Muhammad Imran, Youngmin Yang, and Byung-Sik Park. "Impact of organic Rankine cycle system installation on light duty vehicle considering both positive and negative aspects." Energy Conversion and Management 112 (2016): 382-394.
44. Muhammad, Usman, Muhammad Imran, Dong Hyun Lee, and Byung Sik Park. "Design and experimental investigation of a 1 kW organic Rankine cycle system using R245fa as working fluid for low-grade waste heat recovery from steam." Energy Conversion and Management 103 (2015): 1089-1100.
45. Imran, Muhammad, Muhammad Usman, Byung-Sik Park, Hyouck-Ju Kim, and Dong-Hyun Lee. "Multi-objective optimization of evaporator of organic Rankine cycle (ORC) for low temperature geothermal heat source." Applied Thermal Engineering 80 (2015): 1-9.
46. Imran, Muhammad, Byung-Sik Park, Hyouck-Ju Kim, Dong-Hyun Lee, and Muhammad Usman. "Economic assessment of greenhouse gas reduction through low-grade waste heat recovery using organic Rankine cycle (ORC)." Journal of Mechanical Science and Technology 29, no. 2 (2015): 835-843.
47. Imran, Muhammad, Byung Sik Park, Hyouck Ju Kim, Dong Hyun Lee, Muhammad Usman, and Manki Heo. "Thermo-economic optimization of Regenerative Organic Rankine Cycle for waste heat recovery applications." Energy Conversion and Management 87 (2014): 107-118.

Selected Conference Publications

48. Muhammad, Hafiz Ali, Beomjoon Lee, Haider Sultan, Muhammad Imran, and Young Jin Baik. "Advance thermodynamic analysis of a CO2 compression system using heat-pump for CCS." (2020). Proceedings of ECOS 2020: 33rd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems. 2020.
49. Muhammad Imran and Fredrik Haglind "Dynamic modelling and development of a reliable control strategy of organic Rankine cycle power systems for waste heat recovery on heavy-duty vehicles". Proceedings of ECOS 2019: 32nd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems. 2019.
50. Muhammad Imran, Fredrik Haglind, Vincent Lemort, Andrea Meroni. Multi-objective optimization of organic Rankine cycle power systems for waste heat recovery on heavy-duty vehicles. In Proceedings of ECOS 2018: 31st International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems. 2018
51. Pambudi, Nugroho Agung, Ria Laurensia, Danar Susilo Wijayanto, Valiant Lukad Perdana, Maedanu Fasola, Muhammad Imran, Lip Huat Saw, and Renanto Handogo. "Exergy Analysis of Boiler Process Powered by Biogas Fuel in Ethanol Production Plant: a Preliminary Analysis." Energy Procedia 142 (2017): 216-223.
52. Haglind, Fredrik ; Imran, Muhammad ; Montagud, Maria E. Mondejar ; Zhang, Ji ; Zhu, Xiaowei. / Multi-disciplinary optimization of organic Rankine cycle power systems. Book of Abstracts Sustain 2017. Technical University of Denmark (DTU), 2017.
53. Alvi, Jahan Zeb, Muhammad Imran, Gang Pei, Jing Li, Guangtao Gao, and Junaid Alvi. "Thermodynamic comparison and dynamic simulation of direct and indirect solar organic Rankine cycle systems with PCM storage." Energy Procedia129 (2017): 716-723.
54. Imran, Muhammad, Muhammad Usman, Yong Hoon Im, and Byung Sik Park. "The feasibility analysis for the concept of low temperature district heating network with cascade utilization of heat between networks." Energy Procedia 116 (2017): 4-12.
55. Imran, Muhammad, Ahmad, Jameel. "Wind Farm Technologies and Integration Challenges with National Power Grid for Pakistan." Conference: International Conference on Energy for Environmental and Economic Sustainability (ICEEES2016), 20-23 October, 2019, Pakistan.
56. Usman, Muhammad, Muhammad Imran, Dong Hyun Lee, and Byung-Sik Park. "Implementation of a Small Scale Organic Rankine Cycle Test Bed System Using Steam As Heat Source." In the proceedings of 3rd International Seminar on ORC Power Systems. September 12-25, 2015, Belgium.
57. Imran, Muhammad, Muhammad Usman, Dong Hyun Lee, and Byung Sik Park. "Thermoeconomic analysis of organic Rankine cycle using zeotropic mixtures." In the proceedings of 3rd International Seminar on ORC Power Systems. September 12-25, 2015, Brussels, Belgium.
58. Muhammad Usman, Imran, Muhammad, Hyouck-Ju Kim, and Byung Sik Park. “A study for development of Waste heat recovery system installation criterion for mobile internal combustion engine”. In the proceedings of 13th Asian International Conference on Fluid Machinery (AICFM13). 10-13 September 2015.
59. Imran, Muhammad, Muhammad Usman, Dong Hyun Lee, and Byung Sik Park. “Comparison of subcritical Organic Rankine Cycle (ORC) and Organic Rankine Flash Cycle (ORFC) for low temperature geothermal heat source”. In the proceedings of 13th Asian International Conference on Fluid Machinery (AICFM13). 10-13 September 2015.
60. Imran, Muhammad, Muhammad Usman, Byung Sik Park. “Thermoeconomic analysis of Organic Rankine Cycle using pure working fluids and zeotropic mixtures for low temperature geothermal source”. In the proceedings of ASME Energy & Power 2015, June 26-30, 2015. California, USA.
61. Muhammad Usman, Imran, Muhammad, Hyouck-Ju Kim, and Byung Sik Park. “Design and fabrication of 1kW Organic Rankine Cycle system test bed”. In the proceedings of 4th Asia-Pacific Forum on Renewable Energy 2014 (AFORE 2014), Yeosu, Korea.

62. Muhammad Usman, Imran, Muhammad, Hyouck-Ju Kim, and Byung Sik Park. “Comparative assessment of Organic Rankine Cycle (ORC) configurations for waste heat recovery”. In the proceedings of 4th Asia-Pacific Forum on Renewable Energy 2014 (AFORE 2014), Yeosu, Korea.

Selected Book Chapters

63. Muhammad Imran, Muhammad Usman. "Mathematical Modelling for Positive Displacement Expanders." Positive Displacement Machines. Academic Press, 2019. 293-336
64. Muhammad Imran, Hafiz Ali Muhammad, Farooq Sher, Muhammad Farooq, Young-Jin Baik, Zabdur Rehman. “Exergoeconomic optimization of binary geothermal power plants”. Thermodynamic Analysis and Optimization of Geothermal Power Plants. Academic Press, 2021.
65. Muhammad Farooq, Nazim Waheed, Muhammad Imran, Muhammad Suleman Tariq, Alberto Pettinau, John M. Andresen. Carbon Capture for Sustainable Environment in Developing Countries. Energy and Environmental Security in Developing Countries. Springer, 2021.

Research Projects/Funding

1. African AgriFood Knowledge Transfer Partnership between ColdHubs Nigeria, Aston University and University of Port Harcourt Nigeria. , Funded by GCRF Dec 2020 – Dec 2022. (Role: PI). Funding: £238,000
2. Mapping and development of geographic information system of biomass potential in Sub-Saharan Africa, Funded by GCRF March 2020 – March 2021. (Role: PI). Funding: £24,800
3. Hybrid-energy based irrigation system for Africa, Funded by Innovate UK June 2020 – June 2021. (Role: PI), Funding: £ 40,000
4. Start-up Fund, Aston University, funding by Aston University. June 2019 – June 2021. (Role: PI), Funding: £10,000
5. Dynamic modelling and control of organic Rankine cycle for waste heat recovery from heavy-duty vehicles, funded by European Union. Period: May 2017- May 2019. (Role: PI), Funding: £189,000
6. Evaluation of the prospects for waste heat recovery on liquefied natural gas-fuelled ships funded by Danish Maritime Fund. Apr 2017 – Aug 2019. (Role: Co_PI), Funding: £850,000
7. Development of 100kWe ORC Power Generation System Utilizing Low Temperature Geothermal Energy Funded by Korea Institute of Energy Research; Period: December 2011~ December 2016. (Role: Collaborator), Funding: £300,000
8. Development of Plate-Fin type Heat Exchanger with high heat transfer surface area Funded by Korea Institute of Energy Research; Period: January 2014 ~ January 2015. (Role: Collaborator), Funding: £100,000
9. Field Demonstration of Heat Loss Reduction Technology from the Secondary District Heat Pipelines Funded by Korea District Heating Company; Period: March 2011.3 ~ March 2014. (Role: Collaborator), Funding: £650,000
10. Development of Control Technology for ORC Power Generation System utilizing Low temperature Waste Heat Funded by Korea Institute of Energy Research; Period: January 2013 ~ January 2016. (Role: Collaborator), Funding: £100,000
11. Development of low temperature micro district heating network utilizing low temperature heat source Funded by Korea District Heating Company; Period: June 2014 ~ June 2015. (Role: Collaborator), Funding: £956,000

Honours and awards

1. Marie Curie individual Fellowship 2017 (MSCA-ST-EF-2017) by European Commission
2. Innovation Award 2016 by South Asia Triple Helix Association (SATHA)
3. Research Excellence Award 2016 University of Science and Technology, South Korea
4. Research Excellence Award 2015, Korea Institute of Energy Research, South Korea
5. Overseas Academic Exchange Award 2015, University of Science and Technology, South Korea
6. Overseas Academic Exchange Award 2015, Korea Institute of Energy Research, South Korea
7. Shell Meri Scholarship Award for MS Thermal Power Engineering

Editorials duties

1. Guest Editor, Sustainability on the topic "Hybrid Energy Systems".
2. Guest Editor, Frontiers in Energy Research on the topic "Small and micro scale combined heat and power technologies and applications".
3. Guest Editor, Energies on the topic "Low-temperature thermodynamic power cycles".