

Dr. MD KHAIRUL ISLAM

Senior Engineer

Institute of Mining, Mineralogy and Metallurgy

Bangladesh Council of Scientific and Industrial Research

Khanjanpur, Joypurhat 5900, Bangladesh

Cell No.: +880 1921552824

E-mail: khairul08mme@gmail.com**AREAS OF SPECIALIZATION**

Materials, Heat treatment, E-waste, Pyrometallurgy, Hydrometallurgy

CURRENT POSITIONS

2020/September - present	Senior Engineer, Institute of Mining, Mineralogy and Metallurgy, BCSIR, Joypurhat, Bangladesh
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PREVIOUS POSITIONS

2015/July-2020/September	Engineer, Institute of Mining, Mineralogy and Metallurgy, BCSIR, Joypurhat, Bangladesh
2014/July-2015/ June	Research Assistant, Department of Materials and Metallurgical Engineering, BUET, Dhaka-1000, Bangladesh

EDUCATION

2023	PhD from RMIT University , Melbourne, Australia. The PhD research project focused on the pyrometallurgical processing of electronic waste (E-waste).
2017	MSc in Materials and Metallurgical Engineering, Bangladesh University of Engineering and Technology (BUET) , Dhaka-1000, Bangladesh Thesis: Characterization of Zinc Based High Temperature Solder Alloys with Chromium and Molybdenum Additions
2014	BSc in Materials and Metallurgical Engineering, Bangladesh University of Engineering and Technology (BUET) , Dhaka-1000, Bangladesh

DEVELOPED PROCESS/PATENTS

Process

2017	Islam, M.K. , Khan, M.A.R., Ahmed, T., Ahmed, A.N., Gafur, M.A., “A process for the production of Lead (Pb) free tin (Sn) based solder for electronic applications” Bangladesh Council of Scientific and Industrial Research (2017) Ref No: 39.02.0000.043.37.020.17/815 Date: 01/08/2017
2018	Gafur, M.A., Qadir, M.R., Ahmed, A.N., Dhar, S.A., Islam, M.K. , “Design and fabrication of a single roller magnetic separator” Bangladesh Council of Scientific and Industrial Research (2018) Ref No: 39.02.0000.043.37.110.17/1283 Date: 17/01/2018

Patent

BOOKS, CHAPTERS/EDITORSHIPS AND POPULAR ARTICLES

Book Chapters

2022	Islam, M. K. , Haque, N., Somerville, M., Pownceby, M. I., Bhargava, S., & Tardio, J. (2022). Estimation of the generation and value recovery from e-waste printed circuit boards: Bangladesh case study. In REWAS 2022: Developing Tomorrow’s Technical Cycles (Volume I) (pp. 91-102). Cham: Springer International Publishing.
2021	Islam, M. K. , Haque, N., & Somerville, M. A. (2021). Characterisation and techno-economics of a process to recover value from e-waste materials. In TMS 2021 150th annual meeting & exhibition supplemental proceedings (pp. 995-1006). Springer International Publishing.
2019	Khairul Islam , Ahmed Sharif “Characterization of Zn–Mo and Zn–Cr Pb-Free Composite Solders as a Potential Replacement for Pb-Containing Solders” Harsh Environment Electronics, PP: 147-166, Wiley, Germany. https://doi.org/10.1002/9783527813964.ch7
2019	Khairul Islam , Ahmed Sharif “Role of Alloying Addition in Zn-Based Pb-Free Solders” Harsh Environment Electronics, PP: 67-90 Wiley, Germany. https://doi.org/10.1002/9783527813964.ch3

PUBLICATIONS

Journal Article

2023	Islam, M. K. , Somerville, M., Pownceby, M. I., Tardio, J., Haque, N., & Bhargava, S. (2023). Department of Metals from E-Waste PCBs towards Alloy and Slag Phases during Smelting Using CaO-Al ₂ O ₃ -SiO ₂ -B ₂ O ₃ Slags. <i>Minerals</i> , 13(6), 727.
2023	Islam, M. K. , Somerville, M., Pownceby, M. I., Tardio, J., Bhargava, S., & Haque, N. (2024). Experimental Phase Equilibria and Liquidus of CaO-Al ₂ O ₃ -SiO ₂ -Na ₂ O-B ₂ O ₃ Slags Relevant to E-waste Processing. <i>Metallurgical and Materials Transactions B</i> , 55(1), 216-228.
2022	Islam, M. K. , Pownceby, M. I., Somerville, M., Tardio, J., Haque, N., & Bhargava, S. (2022). Effect of B ₂ O ₃ on the liquidus temperature and phase equilibria in the CaO-Al ₂ O ₃ -SiO ₂ -B ₂ O ₃ slag system, relevant to the smelting of e-waste. <i>Journal of Sustainable Metallurgy</i> , 8(4), 1590-1605.
2021	Islam, M. K. , Somerville, M., Pownceby, M. I., Tardio, J., Haque, N., & Bhargava, S. (2021). Phase Equilibria Study of CaO-Al ₂ O ₃ -SiO ₂ -Na ₂ O Slags for Smelting Waste Printed Circuit Boards. <i>JOM</i> , 73(6), 1889-1898.
2019	Islam, M. K. ; Sharif, A.; Imran, M.S; Hussain, M., (2019) Synergist effect of recycled cotton fabric and wood sawdust reinforced biodegradable polypropylene composites, <i>Bangladesh J. Sci. Ind. Res.</i> 54(1), 21-30 https://doi.org/10.3329/bjsir.v54i1.40727
2015	Islam, M.K. and Sharif, A. (2015), Nano characterization of interface between natural fiber and polymer matrix: an overview, <i>Composite Interfaces</i> , 23: 105-123 https://doi.org/10.1080/09276440.2016.1103082
2015	Islam, M.K. , Hossain, M.F., and Islam, M.A. (2015), Modification of mechanical, physical and thermal properties of wood saw dust particles reinforced polyester composites by alkali treatment, <i>Malaysian Polymer Journal</i> , 10:62-69
2015	Uddin, A. K. M. S., Islam, M.K. , Ferdousi, H. M. , and Sharif, A., (2015), A Comprehensive Review of Recent Trend in Nano-Dental Materials Research, <i>International Journal of Innovation and Scientific Research</i> , 13: 659-665

Conference Proceedings

2022	Islam, M. K. , Somerville, M., Pownceby, M., Tardio, J., Haque, N., & Bhargava, S. (2022). Experimental study of slag liquidus to recover metals from waste printed circuit boards (PCBs) using a pyrometallurgical route. <i>IMPC Asia Pacific-2022</i> , 1492-1494.
2014	Hossain, M. F., Islam, M.K. , Islam, M.A. (2014), Effect of chemical treatment on the mechanical and physical properties of Wood saw dust reinforced polymer matrix composites, <i>Procedia Engineering</i> , 90: 39-45 https://doi.org/10.1016/j.proeng.2014.11.811

2016	Islam, M.K. , Khan, M.A.R., Ahmed, T., Ahmed,A.N., Gafur, M.A., “Fabrication and characterization of Zn-xSb alloys as candidate to replace Pb based solder alloys” 1st ICEMME, 22- 24 December, 2016, BCSIR, Dhaka, Bangladesh.
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LIST OF R&D PROJECTS

2016-17	Development and characterization of lead-free environment friendly solder for electronic applications
2016-18	Recovery of Aluminum and Zinc from E-waste (computer hard disk and dry cell batteries)

FELLOWSHIPS AND AWARDS

1. Awarded “Endeavour Executive Fellowship-2018” from the Department of Education and Training, Australian Government.
2. RMIT-CSIRO joint PhD Scholarship-2019, Australia.

TRAINING/ WORKPLACE INFORMATION

2018/Feb. – 2018/June	Professional Development Training, Commonwealth Scientific and Industrial Research Organization, Melbourne, Australia.
2016/April- 2016/June	Special Foundation Training Course for BCSIR Officials, Bangladesh Public Administration Training Centre, Savar, Dhaka.

STUDENT SUPERVISION

MEMBERSHIP OF SCIENTIFIC BODIES

OTHERS (if any)
