

Demystifying the Heterogeneity of Coal Fly Ash through Washing Cycles

K. Brinthan^a, W. A. M. Fernando^b, C.L. Jayawardena^a,
D. Attygalle^c, D.A.S. Amarasinghe^c

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This document serves as a supplementary material to the poster titled **"Demystifying the Heterogeneity of Coal Fly Ash through Washing Cycles,"** which was presented at the International Summer School in Global Just Transition: Equity in Net Zero, *Newcastle upon Tyne, England*.

This project is a collaborative work between the University of Moratuwa, Sri Lanka, and Wayamba University of Sri Lanka.

Although the world is marching towards net zero, there is still a significant tendency to generate power through cost-effective means until the efficiency of cleaner production is ascertained. Coal is such a cheaper power source and a moving topic presently in the field of energy generation as its utility is becoming debatable under environmental sustainability concerns. While its significance in power generation cannot be denied, it is crucial to focus on the waste byproducts it generates, such as bottom ash, fly ash, and harmful gases, and address the associated circular economy. This research mainly focused on a primary solid waste produced through combustion of coal in the thermal power plants, known as **coal fly ash** (CFA).

The primary focus of this study is to extract value-added components from CFA waste, thereby tackling two important issues: mitigating the harmful effects of CFA storage and creating alternative markets for products like zeolites, cenospheres, and fertiliser components. At present, this research constitutes a multidisciplinary research endeavour, covering diverse areas such as mineral processing, material synthesis and characterisation, waste management, circular economy, computer vision, and nano-science. It incorporates a wide range of disciplines to explore the various facets of the study.

You can access the high-quality version of the poster using this [link](#).

You can also access the associated publication for this project through this [link](#).

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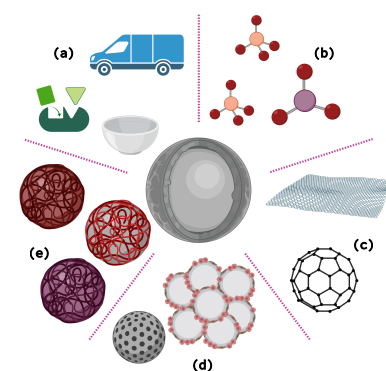
Dr Chulantha Jayawardena : chulanthaj@uom.lk

Dr Ashane Fernando : ashanef@wyb.ac.lk

^aDepartment of Earth Resources Engineering, University of Moratuwa

^bDepartment of Nano Science Technology, Wayamba University of Sri Lanka

^cDepartment of Material Science and Engineering, University of Moratuwa



Prospecting value-added products from CFA (a) sources of elements, (b) zeolites, (c) carbon derivatives, (d) cenospheres, and (e) magnetic spheres.