

## Identification of Rare Metals in Garin Maiganga Coal Deposit using ICP OES

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**Abstract :** One fossil fuel that is utilized to generate electricity is burned coal, which is a nonrenewable energy source. A lot of individuals steer clear of coal because they don't understand its significance. It is considered to contain a notable amount of rare metals, which serve as basic materials in the production of Renewable energy. The occurrence of Rare Metals in the Garin Maiganga Coal Deposit was analyzed using ICP OES, 16 Rare Metals were determined in the coal: Cesium, Gold, Platinum, Osmium, Iridium, Palladium, Ruthenium, Rhodium, Tellurium, Rhenium, Indium, Tantalum, Tungsten, Gallium, Lithium, and Cobalt. The results indicated the occurrence of Cs in all three decarbonized coal ash. The objective of this study is to increase the amount of data that scientists need before beginning metal recovery experiments. Inductively coupled plasma optical emission spectroscopy is the main focus of this work as it will be used to measure the concentration of these metals in the Garin Maiganga coal resource in Gombe, Nigeria. In order to do this, the contents of Rare Metals were detected, and the economic values of the elements were studied.

**Keywords :** coal, Maiganga, rare metals, ICP OES

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