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(54) Title: CONCENTRATION OF LATERITES USING BIOMASS

(57) **Abstract:** A method of concentrating iron in laterites to make the iron extraction process economical is disclosed. Concentration using biomass yields higher levels of iron by using appropriate ratio of biomass: laterites. The concentration of iron in the laterites was done by heating a laterite /charcoal mixture in the temperature range 500-700oC in a ceramic container, a slow current of air (0.5-0.7cm3/sec) was passed thus generating carbon monoxide in-situ. The process involves cooling and picking iron containing mineral. The optimum ratio of biomass: laterite was found to be 1 :20 by mass. The iron in the raw laterites is predominantly minerals goethite, FeO.OH and haematite, Fe203, as shown by presence of peaks at diffraction angles of 28 = 21.51 ° and 28 = 54.11 °respectively. After magnet-separation iron was present predominantly as the mineral, magnetite Fe304, with diffraction peak at 28 = 36°. The percentage of iron in the magnet-separated product is increased to 55-62%.

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