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**A preliminary study on energy production by fluidized bed combustion using Jordanian oil shale**

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Oil shale utilization has been proposed as a potential boon to the Jordanian economy through significant savings in foreign exchange and the creation of new jobs. Jordan has significant oil shale deposits occurring in 26 known localities. Geological surveys indicate that the existing deposits underlie more than 60% of Jordan's territory. The resource consists of 40 to 70 billion tonnes of oil shale, which may be equivalent to more than 5 million tonnes of shale oil. Since the 1960s, Jordan has been investigating economical and environmentally responsible methods for utilizing oil shale. Due to the high organic content of Jordan's oil shale, it is considered a suitable resource for energy production. This work began with a study of the physical and chemical properties of oil shale samples selected from different Jordanian locations. A circulating fluidized bed was constructed and used to burn oil shale of different particle sizes (75-150  $\mu\text{m}$ , 150-300  $\mu\text{m}$ , 300-500  $\mu\text{m}$  and 500-600  $\mu\text{m}$ ). The results obtained show that the various types of Jordanian oil shale can be burned continuously and efficiently with a bed temperature of 647°C and that the optimum particle size for combustion by this method was between 75-150  $\mu\text{m}$ .