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PROJECT TITLE: Bioleaching of Lithium from Spent Mobile Batteries

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PROJECT SUMMARY:

At present, the metals like Gold, Silver, Cobalt, Lithium, and Nickel, too many rare metals are greatly required for the production of various electronics & gadgets due to their escalating demand by consumers. Lithium [Li] is the lightest alkali metal among the solid elements. Lithium-ion batteries are extensively used in various electrical devices such as mobile phones & tablets etc, due to their large potential density for weight, less efficient memory & consequent charging & discharging cycles. As an emolument, the amount of production & use of LIBs will gradually increase in the coming future, which creates global attention towards its management. Recycling of lithium from used lithium-ion batteries is a commercial trade all over the world. The amount of production & use of LIBs will gradually increase in the coming future, which creates global attention towards its management. The presently used conventional approaches for the recovery of spent LIBs like the pyrometallurgical process effectively recover nickel, cobalt, and copper, while lithium is usually lost in slag. The Bioleaching process as an alternative method of extraction and recovery of valuable metals from the primary and secondary resources has been attracting a large pool of attraction. In view of this, it is important to develop a suitable technology for the recovery of Lithium from spent mobile batteries, which can be used again for the economic benefit so that huge demand gap between the availability and requirement. The development of Lithium bioleaching technology focuses on achieving effective recovery of this previous by improving the efficiency of Li bioleaching microorganisms. The effectiveness of bioleaching is also highly dependent on the physical, chemical, and biological factors in the system. In the present research work, bioleaching technology will be applied for Li recovery from spent mobile batteries under optimized conditions.