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Anaerobic microbial desulfurization of kerosene

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A strain of sulfur reducing bacterium was isolated and subsequently identified as *Desulfobacterium indolicum*. It was found to have the ability of removing sulfur-containing organic compounds from kerosene without distorting its carbon framework. Its capability was further enhanced by decorating the bacterium with nano particles. The decorated organism was found to exhibit a higher desulfurizing ability towards kerosene at 30°C and normal atmospheric pressure than the undecorated strain. The sulfur content of kerosene was reduced from 48.68 ppm to 13.76 ppm over a period of 72 hours. Gas chromatography with pulsed-flame photometric detector analysis was used to evaluate the effect of nano particle decorated and undecorated *Desulfobacterium indolicum* treatment on the sulfur content in kerosene, and it was shown that most organic sulfur compounds were eliminated after biodesulfurization. The work differs from others as it investigates an anerobic conditions as against other works that are based on aerobic conditions.

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