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Original Articles

EFFICIENCY ENHANCEMENTS THROUGH
THE USE OF MAGNETIC FIELD GRADIENT
IN ORIENTATION MAGNETIC SEPARATION
FOR THE REMOVAL OF POLLUTANTS BY
MAGNETOTACTIC BACTERIA

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Abstract

Orientation magnetic separation (OMS) represents a simple method that permits motile, field-susceptible magnetotactic bacteria (MTB) to be separated from water.

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gradients to retain the bacteria at the walls of the separator. A study comparing the operation of a standard channel separator with three new designs containing nickel wire matrices has been carried out. The resultant separation efficiencies and the effect on separation of varying both the flow rate and the applied magnetic field are described. The new separators enhance the separation efficiency by up to 300% over the standard separator.

Keywords: Biomagnetism Orientation magnetic separation Magnetotactic bacteria

Acknowledgments

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