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## Removal of Cyclohexane from a Contaminated Air Stream Using a Dense Phase Membrane Bioreactor

By Air Force Institute of Technology (U. S. ). Graduate School of Engineering and Management

Biblioscholar Sep 2012, 2012. Taschenbuch. Book Condition: Neu. 246x189x7 mm. This item is printed on demand - Print on Demand Neuware - The purpose of this research was to determine the ability of a dense phase membrane bioreactor to remove cyclohexane, a volatile organic compound in JP-8 jet fuel, from a contaminated air stream using a biologically active film for degradation. The research answered questions regarding applications of membrane bioreactors, the ability of cyclohexane to diffuse through a dense phase membrane, growth of a viable microbial culture, and determination of the performance capabilities of the reactor. To answer these questions, a literature review was conducted and laboratory experiments were performed. Through the design, construction, and testing of the dense phase membrane bioreactor used for this research, it was determined that the reactor removed cyclohexane from a contaminated air stream at an average elimination capacity of  $321.4 \pm 76.2 \text{ g m}^{-3} \text{ hr}^{-1}$  with a 95% confidence interval. The successful removal of cyclohexane with the dense phase membrane bioreactor in this research effort filled a vacant niche in the scientific body of knowledge surrounding membrane bioreactor technology. Current technology applications, laboratory techniques, and data analysis are discussed. 112 pp. Englisch.



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