

## عنوان مقاله:

Selection of Wastewater Treatment Plants Toward a Sustainable Design and Water Reuse: (A Case Study in the City  
(of Mashhad

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## خلاصه مقاله:

The need for water reuse application in Mashhad which is the second largest city of Iran has been recognized in recent years. This need has forced local authorities to pursue upgrading the existing or installing the more advanced wastewater treatment plants for potential water reuse applications. However, the selection of suitable wastewater treatment train technologies is complex and may require a user-friendly tool to facilitate decision-making process for authorities, which is the focus of this paper. To advance the main focus of the study, this paper is prepared to develop and simulate various treatment train technologies based on multiple criteria analysis considering technical, social, economic, and environmental issues. The treatment technologies considered for simulations in this study include Moving Bed Bio Reactor, Integrated Fixed Film Activated Sludge, Sequencing Batch Reactor, Anaerobic/Anoxic/Oxic, and Modified Ludzack-Ettinger. At first, multiple simulations were performed and then a multi-criteria analysis was performed in order to select the most appropriate treatment technology. As part of this study, additional simulations were performed with respect to different sludge management alternatives including the utilization of energy produced from biogas. The overall results showed that A<sub>2</sub>/O treatment technology is the most suitable treatment for producing a highly reliable effluent quality for sustainable use of water reuse. With additional local data collection, the methods and the preliminary simulations performed in this study can further be improved to enhance the current decision-making .tool for possible future practical use in Mashhad and other cities in Iran

## کلمات کلیدی:

Wastewater Treatment Train, Multi-Criteria Approach, Simulations, Decision support system

## لینک ثابت مقاله در پایگاه سیویلیکا:

