Desalination and Water Treatment
www.deswater.com

doi: 10.1080/19443994.2013.860628

53 (2015) 1814–1821
February

Taylor & Francis
Taylor & Francis Group

Performance evaluation of anaerobic fluidized bed reactors using brick beads and porous ceramics as support materials for treating terephthalic acid wastewater

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Received 1 June 2013; Accepted 16 October 2013

ABSTRACT

This study evaluated two different porous support materials (brick beads and porous ceramics) used in rapid mass-transfer anaerobic fluidized bed reactors (AFBRs) for treating terephthalic acid wastewater. The AFBRs, denoted as *R*1 (containing brick beads) and *R*2 (containing porous ceramics), were inoculated with anaerobic sludge. Results showed that the system organic loading rate increased from 7.37 kg COD/(m^3 d) to 18.52 kg COD/(m^3 d) over a period of 73 d. During the steady period, *R*2 showed better performance than *R*1. The chemical oxygen demand removal efficiency and total alkalinity removal efficiency of *R*1 were 65–75% and 60–70%, whereas those of *R*2 were 75–88% and 72–84%, respectively.

Keywords: Fluidized bed reactor; TA wastewater; Porous support; Anaerobic treatment

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