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Abstract

A feasibility study was carried out to assess the cultivation of Anammox bacteria in lab-scale closed sponge-bed trickling filter (CSTF) reactors, namely: CSTF-1 at 20 ºC and CSTF-2 at 30 ºC. Stable conditions were reached from day 66 in CSTF-2 and from day 104 in CSTF-1. The early stability of CSTF-2 is attributable to the influence of temperature; nevertheless, by day 405, the nitrogen removal performed by CSTF-1 increased up to similar values of CSTF-2. The maximum total nitrogen removal efficiency was 82% in CSTF-1 and 84% in CSTF-2. After more than 400 days of operation, CSTF-1 and CSTF-2 were capable to attain a total nitrogen removal efficiency of 74±5% and 78±4% with a total nitrogen conversion rate of 1.52 and 1.60 kg-N/m^3 sponge·d, respectively. The proposed technology