International Journal of Civil Engineering (IJCE)
ISSN(P): 2278-9987; ISSN(E): 2278-9995
Vol. 4, Issue 6, Oct - Nov 2015, 59-66

International Academy of Science, Engineering and Technology
Connecting Researchers; Nurturing Innovations

EVALUATION OF MEDIA PERFORMANCE IN DECOLOURIZATION OF REACTIVE YELLOW DYE USING *NOCARDIA SPS* IN AN UPFLOW AEROBIC SUBMERGED FIXED BED BIO-FILM REACTOR

SUDHEERA D. S[1], SRIMURALI M[2], MADAN MOHAN REDDY K[3], BHOODEVI CHAKRAVARTHI[4] & UMA MAHESWARI DEVI P[5]

[1]Department of Civil Engineering, SITAMS, Chittoor, AP, India

[2]Department of Civil Engineering, SVUCE, SVU, Tirupati, AP, India

[3]Department of Civil Engineering, SKIT, Srikalahasti, AP, India

[4,5]Department of Applied Microbiology, Sri PadmavatiMahila Visvavidyalayam, Tirupati, India

ABSTRACT

In this manuscript, a commercial grade C.I.ReactiveYellow-138:1 dye in an aqueous solution was treated and performances of media were studied in an Aerobic Submerged Fixed Bed Bio-film reactor (ASFBBR) by continuous run. The Biofilm used to treat this dye is dye-degrading Marine Actinomycetes called *Nocardia sps*. In this work, Broken Granite Pieces (Gravel) and HDPE Corrugated Pall Rings (P-Rings) are used as the support media for the growth of the microorganisms and the reactors were operated at 24 h Hydraulic Retention Time (HRT) along with different dye concentrations of 50, 55 and 60 mg/L. Present study revealed that maximum dye decolourization was observed for gravel media with dye concentrations of 50 mg/L at 24 h HRT. Therefore, this demonstrates local available Gravel media shows better performance in the treatment of decolourization as compared to commercial media P-Rings.

KEYWORDS: C.I. Reactive Yellow-138:1, Gravel, P-Rings, ASFBBR, Decolourization