The 2020 World Congress on
Advances in Civil, Environmental, & Materials Research (ACEM20)
25-28, August, 2020, GECE, Seoul, Korea

Surface erosion behavior of biopolymer-treated river sand

Yeong-Man Kwon[1)], Gye-Chun Cho[2)] and *Ilhan Chang[3)]

[1), 2)] *Department of Civil Engineering, KAIST, Daejeon 305-600, Korea*
[3)] *School of Engineering and IT, University of New South Wales, ACT 2612, Australia*
[1)] yeongman.kwon@kaist.ac.kr

ABSTRACT

The resistance to the tractive force caused by water flow is an essential parameter for the stability of ground under the flowing water, such as riverbeds and oceans. Biopolymers which are new to sustainable civil engineering practices, are known to increase the shear strength of soils (Chang and Cho 2019; Kwon et al. 2020). This study assessed the surface erosion resistance of river-sand treated with various types of biopolymers originated from the micro-organisms, plants, and dairy products, using a state-of-the-art erosion function apparatus (EFA). Experimental results show a signification improvement (more than 300 times) of the critical shear stress of river sand amended by biopolymers.

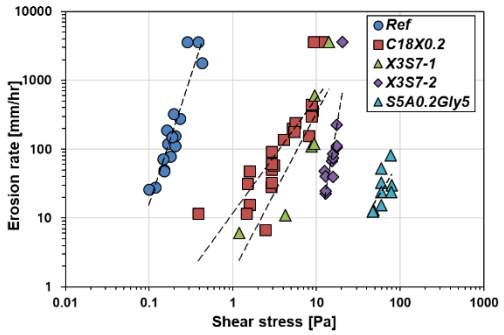

Fig. 1 Erosion curves of the river-sands treated with biopolymers

REFERENCES

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[1)] Graduate Student
[2)] Professor
[3)] Senior Lecturer (Corresponding Author: ilhan.chang@unsw.edu.au)