IC-STAR 2020

Conference Booklet

The 6th International Conference on Science, Technology and Interdisciplinary Research 2020

20th - 21st October 2020

At University Of Lampung

The 6th International Conference on Science, Technology and Interdisciplinary Research 2020
Bandar Lampung, Indonesia
20th-21st October 2020
IC-STAR 2020

Synthesis and Characterization Exopolysaccharide from Algae *Spirulina* sp. using Technique Sol-Gel as Absorbent Ion Metal Pb(II)

R A Kausar[1]*, Buhani[1]*, Suharso[1], and A Setiawan[1]

[1]Departement of Chemistry, Faculty of Mathematics and Natural Sciences, University of Lampung, Jalan Prof. Soemantri Brojonegoro No.1, Bandar Lampung, 35145, Indonesia.

*E-mail: radhoalkausar@gmail.com; buhani_s@yahoo.co.id.

Abstract. In this study, a modification of exopolysaccharide (EPS) from *Spirulina* sp. algae biomass with silica (HES) and exopolysaccharide from *Spirulina* sp. algae biomass with silica coated by magnetite particles (HESM) has been done successfully. A series of experiments with the Batch method were conducted to test the ability of HESM adsorption of Pb(II) ions in solution. Identification of functional groups of HESM adsorbents was studied using infrared spectrophotometer (*IR*) while surface morphological analysis and composition of the constituent elements of HESM were performed using scanning electron microscope-energy (SEM). Concentration of Pb(II) ion in the adsorption process were analysed by inductively coupled plasma- atomic emission spectrometry (ICP-AES Adsorption of Pb(II) ions with HES and HESM is optimum at pH 7 and consentration at 25 ppm with the adsorption capacity on HES at 3.85 mg g^{-1} while on HESM at 272.63 mg g^{-1}, contact time of 15 min and it tends to follow second orde pseudo kinetic model and Langmuir adsorption isotherm model.

Keywords: Sol-Gel, exopolysaccharide,adsorption,silica coated magnetite.