

## LABORATORY SCALE ELIMINATION OF SOME HEAVY METALS WITH HOLLOW ALUMINOSILICATE SPHERES

Gülden Gök<sup>1\*</sup>, Hakan Çelebi<sup>1</sup>

<sup>1\*</sup>*Department of Environmental Engineering, Aksaray University, 68100, Aksaray, Turkey;*

\*Corresponding author Gülden Gök, e-mail: \*[gokgulden@gmail.com](mailto:gokgulden@gmail.com); [hakanaz.celebi@gmail.com](mailto:hakanaz.celebi@gmail.com);

Received March 2019; Accepted April 2019; Published May 2019;

DOI: <https://doi.org/10.31407/ijeess9210>

UOI license: <http://u-o-i.org/1.01/ijeess/93108183>

### ABSTRACT

This examination aims to eliminate venomous heavy metals in wastewater using hollow aluminosilicate spheres. The chemical and physical parameters of hollow aluminosilicate spheres were investigated. The effects of contact time, amount of hollow aluminosilicate spheres and pH on the treatment of heavy metals in the water environment were evaluated by batch experiments. The yield capacities of hollow aluminosilicate spheres were examined for Cd<sup>2+</sup>, Ni<sup>2+</sup> and Zn<sup>2+</sup>, with amounts of 57.29%, 23.66%, and 45,17% respectively. The following heavy metal removal efficiency of hollow aluminosilicate spheres was determined: Cd<sup>2+</sup> > Zn<sup>2+</sup> > Ni<sup>2+</sup>.

**Keywords:** Adsorption, Hollow aluminosilicate spheres, Heavy metals, Wastewater