**Cover letter**

**Jurnal Ilmu Lingkungan**

**Dr. Budi Warsito**

Editor in Chief

**(Jurnal Ilmu Lingkungan)**

Dear Editor,

I am submitting a manuscript for consideration of publication in Journal of **Jurnal Ilmu Lingkungan**. The manuscript is entitled “**Adsorption of Lead (Pb) Using Nitrogen-Doped Biochar Derived from Bamboo Waste Pyrolysis**”. It has not been published elsewhere and it has not been submitted simultaneously for publication elsewhere.

In this paper, the increasing of industrial activities and urbanization have led to the accumulation of heavy metals, which pose a high risk to human health and ecosystems. Adsorption using biochar from bamboo waste is an alternative solution as an adsorbent. This study evaluated the performance of biochar from pyrolysis of nitrogen-doped bamboo waste at various temperatures (300–600°C) in adsorbing of lead (Pb). FTIR analysis showed an increase in the stability of carbonyl (C=O) and nitrogen-carbon (C–N) functional groups which increased the affinity for metal ions. BET analysis showed that biochar at a temperature of 400°C had the best characteristics with a surface area of 178.56 m²/g, a pore volume of 0.091 cm³/g, and an average pore diameter of 2.05 nm. Biochar at a temperature of 600°C experienced a decrease in efficiency due to the collapse of the pore structure despite having high porosity. The results showed that biochar at a pyrolysis temperature of 400°C provided the best adsorption efficiency, indicating great potential for environmental remedial applications against heavy metal contamination..

Thank you very much for your consideration.

Yours Sincerely,

Ilham Mufandi

Department of Agroindustrial Technology

Universitas Darussalam Gontor

E-mail: [ilhammufandi@unida.gontor.ac.id](mailto:ilhammufandi@unida.gontor.ac.id)