

Name of Participant	: Dr. Zakuan Azizi Shamsul Harumain
Name of Presenter	: Nurul Alia Nabilah Dzolkifle
Email	: zak@iium.edu.my
Phone	: 0133246101
Address	: Biotechnology, UNIVERSITI ISLAM ANTARABANGSA MALAYSIA, Pahang, Malaysia
Job	: Lecturer
Participant ID	: MMT02
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Abstract	<p>The production of propylene from propane dehydrogenation process in the petrochemical sector regularly produce high concentration of sulphur in the form of sodium sulphide (Na₂S). High concentration of sulphide can lead to corrosion in sewage pipes, massive fish kill and obnoxious odors into the atmosphere. Adsorption technique using low-cost and environmentally friendly adsorbents derived from natural resources such as rice husk ash (RHA) may offer a suitable alternative for in situ removal of contaminants such as sodium sulphide in industrial wastewater. In this work, the use of silica synthesized from RHA was investigated for its potential in removing high concentration of sulphide (S₂-) in the form of sodium sulphide from wastewater. Results showed that pure silica with the size around 0.9 to 2.0 μm was successfully synthesized from RHA. Significant reduction of sulphide level was observed after being treated with RHA-based silica calcined with clay compared to other adsorbents such as chemically treated nanoporous zeolite and natural clay itself with more than 90 % removal after 120 minutes of treatment with high value of the pseudo-first-order rate constant, k of 0.1404, 0.14 and 0.1519 for silica compared to zeolite. This suggests that the use of silica derived from RHA has a strong potential to be used as sulphide remover in industrial wastewater without extensive chemical treatment to improve its removal capacity.</p>

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Contact Us

Secretariat,

International Conference on Bioengineering and Technology (IConBET2021),

Faculty of Bioengineering and Technology,

Universiti Malaysia Kelantan, 17600 Jeli, Kelantan, Malaysia.

Phone : +6011-21275007 (Ts. Dr. Sarizam Mamat) / +6014-5477331 (Dr. Norfadhilah Ibrahim)

Email : iconbet@umk.edu.my (<mailto:iconbet@umk.edu.my>)

Website : <https://iconbet.umk.edu.my/> (<https://iconbet.umk.edu.my/>)