

SORAS: ADDITIVE FOR ARSENIC REMOVAL FROM UNDERGROUND WATER

INVENTOR: NURLIN BINTI ABU SAMAH
FACULTY: FACULTY OF INDUSTRIAL SCIENCES AND TECHNOLOGY
UNIVERSITY: UNIVERSITI MALAYSIA PAHANG
EMAIL: nurlin@ump.edu.my
CO-COLLABORATOR: PROF. DR. YANG FARINA ABD AZIZ



Product Background

- A quick and easy way has been developed to remove arsenic specifically from aqueous solution → SORAS
- We have designed and synthesized with high loading capacity properties capable of ensuring safe drinking water containing less than 10 ppb arsenic.
- We employ the bulk polymerization approach with allylthiourea (AT) as monomer and arsenic (As) as template, in synthesizing the IIP. During the leaching process, the template was removed by acidification.

Novelty/ Originality/ Inventiveness

- 99.5% of arsenic removal efficiency.
- Cost required 10 times less than conventional technology.
- Require support material to enhance the removal of arsenic in water.
- Intellectual properties has been filed under copyright: LY20190023499.
- Uniqueness: By using this sorbent, the arsenic can be re-use instead of transfer that most of the sorbents did.

Cost Analysis

Description	Technology Used Today	Technology developed by
% Removal (chemical speciation-Arsenic)	0%	99%
Cost required	RM 20,000*	RM 2000

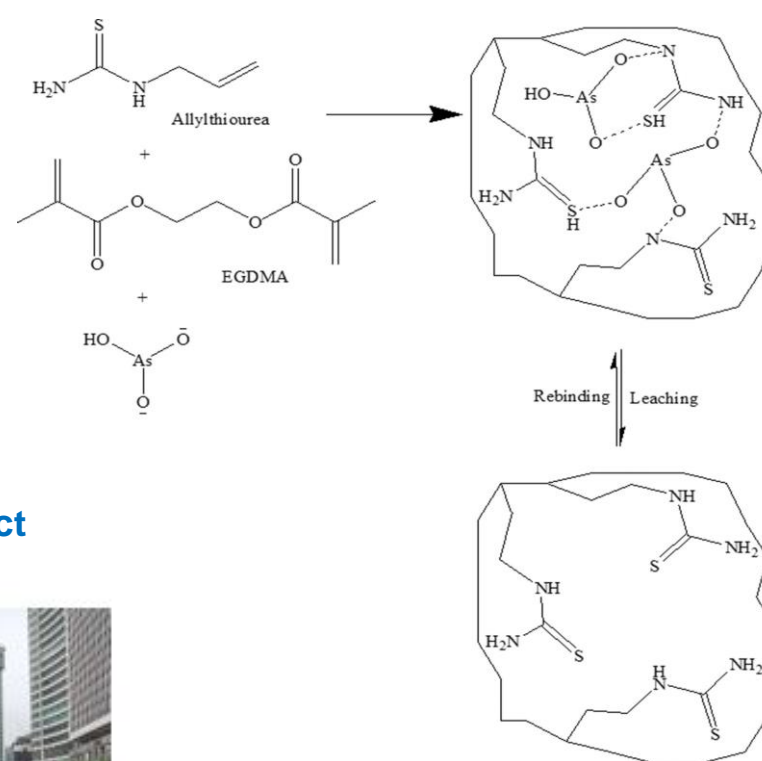
Achievement/Award

- BRONZE CITREX, 2019

Publication

- Synthesis & characterization of ion imprinted polymer for arsenic removal from water: a value addition to the groundwater resources, *Chemical Engineering Journal*, 394, 124900, 2020 (Indexing by WoS and Journal Impact Factor: 10.652)

Methods



Environmental Impact



FLOOD IN KUALA LUMPUR

REQUIRE TO PROVIDE UNDERGROUND RESERVOIR DUE TO SHORT SPACES FOR CONVENTIONAL RESERVOIR

ARSENIC MIGHT LEACHING FROM UNDERGROUND SOIL INTO THE UNDERGROUND RESERVOIR

WATER

ABUNDANCE OF ARSENIC SPECIES IN THE UNDERGROUND WATER

SORAS

CONCENTRATION OF ARSENIC REDUCE

Benefits/Usefulness/ Applicability

- Water filter



SORAS