

# CLAIMING To EXTRACT URANIUM from Inland Water Bodies

Dr.Suhasini Bhatnagar

CEO,

India.

Email:[suhasinibhatnagar@gmail.com](mailto:suhasinibhatnagar@gmail.com)

# URANIUM:

- A metal used in generating electricity and Various other uses.

Currently:

- [The World Nuclear Association](#) estimates that the world's power reactors, with a combined capacity of about 400 GWe, require around **67,500 tonnes** of uranium per year.
- Current uranium mining produces between 50,000 and 60,000 tonnes of uranium annually
- Meeting the projected increase in demand will require a near doubling of uranium mining and processing from current levels. But the resources are limited.
- So , now we need not just novel methods but also Novel resources. I am adding just one not yet explored.

# But wait-What we know already about methods

Method name	Advantages	Disadvantages
<b>Synthetic resins and natural ion exchange materials e.g. Amidoxime technology</b>	<p>Absorption rates are positively correlated with both sea water temperatures and volatile sea conditions, with an increase of 10 degrees C alone resulting in absorbency increasing by a factor of 1.5. It is also possible that location choice can be optimized by selecting areas with maximum uranium concentration in the surrounding water; it has already been noted that higher seawater salinity levels have a positive correlation with higher uranium levels.. Finally, decreased costs may also come from cheaper manufacturing of absorbents and associated equipment, as well as from cheaper processes for isolating uranium from the uranium compounds harvested from the ocean.</p>	<ol style="list-style-type: none"><li>1.Large volumes of water required to get small quantities of Uranium</li><li>2.Maximum 3-4 times reuse and then must be freshly synthesized.</li><li>3.Strong acid cationic exchangers have high sorption rates, but they lack target pollutant selectivity.</li><li>4.Strong acid resins can be modified with inorganic compounds to improve selectivity</li><li>5. Amidoxime can likely be improved upon, since it does not specialize in capturing Uranium, and instead just has a general affinity for any "any toxic metal"</li></ol>

# Other methods known are:

Photocatalysis

Biosorption

Chemical Precipitation

Metal Organic framework's

Electrolysis

Ultrafiltration

Ion Exchange

Phytoremediation

Reverse osmosis

VIBHEDI

These techniques are good but they suffer from drawbacks in terms of time as in they take a long time to extract and also reduced efficiency

**This method that I am proposing is Instant, 100% extraction , Absolutely no Pollution, easily scalable and the best thing its One step and INSTANT.**

# Summary

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Biosorption

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Metal Organic framework's

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# About My Experiments related to extraction of Uranium



# PROTOCOL STEPS



# Summarizing experiments



# Also lab test reports: done at Delhi


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**CERTIFICATE OF ANALYSIS**

ULM - TC737522180025750F

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Information by Customer Report No. : 202207270105

Sample : WATER  
 Mfg. By : NS  
 Supplied By : NS

Mfg lic. No. : NS  
 Ref. No. : NS

Submitted By : SWAROOP ATOMISTIX  
 Address : 178,neeli Khand-3, Indrapuram, Ghaziabad, UTTAR PRADESH- 201014 INDIA

Batch No	Mfg. Date	Expiry Date	Batch Size	Sample Quantity
NS	NS	NS	NS	15 ml

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Sample ID : 202207270105 Received On : 27/07/2022  
 Date of start of analysis : 29/07/2022 Date of completion of analysis : 29/07/2022

Sample not drawn by laboratory.

Description	Results	Unit	Req.	Claim	LLDQ	Lower limit	Upper limit	Method
Uranium	: Below Quantification Limit	mg/L	-	-	0.0020 mg/L	-	-	IS 3025(P-65):2014

## Dream from micro to kilo

1. 4 month old sample in plastic bottle
2. Reported amounts vary from 0.2-0.6micrograms
3. Off confusion had used two chemicals-one now
4. A simple method to be used by illiterates
5. 100% purity so need permission to try for say 2 years.





Need suggestions to proceed further  
and how?  
Requesting to please guide

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DR.SUHASINI BHATNAGAR