

NOVEL BIOSORBENTS FOR DIRECT LITHIUM EXTRACTION IN GEOTHERMAL APPLICATIONS

SUMMARY

- Critical minerals (CM) such as lithium (Li) are found in geothermal brines.
- Microbes are proven bioaccumulate and concentrate Li and other metals.
- Applying this phenomenon to a unit operation can allow integration with a geothermal power plant.

IMPACT METRICS

- Lower unit cost of direct lithium extraction processing of geothermal brines to \$0.02/bbl
- Microbes recover at least 40% of lithium from solution.
- Immobilize microbes in polymer matrix or within a membrane bioreactor (MBR).

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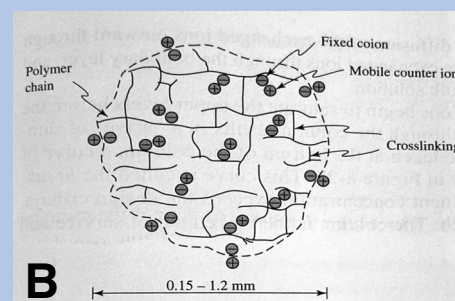
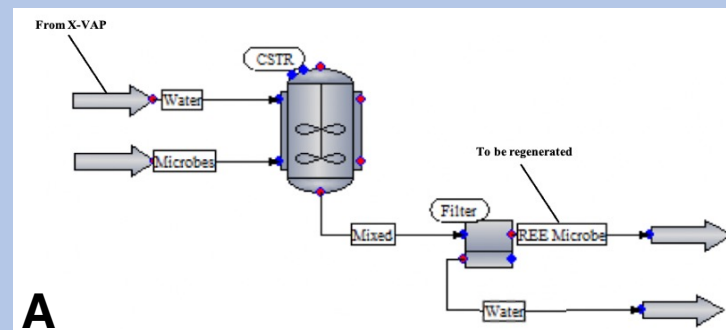


Figure 1. Example macro-view MBR process flow diagram (A) and micro-view cellular ion exchange mechanism (B)

