

Faculty Name:

Yuan Yang

Faculty Email:

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Lab:

Yang lab

Project Title:

Isotope separation by liquid centrifugation

Description:

Liquid centrifugation to separate isotopes is a recently approach developed by the PI of this applicant. Unlike conventional centrifugation, liquid centrifugation uses chemicals with low or no environmental/chemical hazards and corrosion. It is also capable of separating multiple elements simultaneously, such as D, ^7Li , and ^37Li together in a LiCl aqueous solution. The team is continuing on this research direction and focus on two research frontiers: 1) Model development to simulate isotope separation in liquid centrifugation. 2) Identifying high-performance recipes for liquid centrifugation of D, ^7Li , and ^37Cl , including both salt solutions and neutral liquid chemicals. and 3) Prototype designing.

The master student will carry out activities such as optimizing simulation code and searching for materials with potentially high performance for separating isotopes. In optimizing simulation code, the master will apply matrix-based calculation and other numerical method to improve the speed of simulation. In materials searching, the master will be responsible for literature searching to find out key physical parameters of relevant materials and estimate if they are suitable for isotope separation.

Location of Research:

On Site

of hrs/week:

35

Department/Program:

Applied Physics and Applied Mathematics

Eligibility:

MS

To apply, please contact:

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