# Article information:

Extreme Zr stable isotope fractionation during magmatic fractional crystallization | Science Advances  
<https://www.science.org/doi/10.1126/sciadv.aax8648>

# Article summary:

1. Zirconium is a commonly used tracer of silicate differentiation, but its stable isotope systematics are not well understood.

2. This study measured the stable Zr isotope composition of 70 single zircon and baddeleyite crystals from a gabbroic igneous cumulate to test the potential for Zr isotope fractionation during magmatic crystallization.

3. Results show that closed-system magmatic crystallization can fractionate Zr stable isotopes at the >0.5% level, and that zircon and baddeleyite are isotopically heavy relative to the melt from which they crystallize.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article “Extreme Zr Stable Isotope Fractionation During Magmatic Fractional Crystallization” is an informative and reliable source of information on the topic of Zr stable isotope fractionation during magmatic crystallization. The authors provide a detailed description of their research methods, results, and conclusions, as well as references to relevant literature in order to support their claims. The article does not appear to be biased or one-sided in any way; rather, it presents both sides of the argument equally and objectively. Furthermore, all potential risks associated with this type of research are noted in the article, such as the possibility of contamination or inaccurate measurements due to instrument error or sample preparation techniques. Additionally, there is no promotional content present in the article; rather, it focuses solely on providing accurate information about the research conducted by the authors. In conclusion, this article is trustworthy and reliable source of information on this topic.

# Topics for further research:

* Magmatic fractional crystallization
* Zr isotope fractionation
* Magmatic fractionation processes
* Instrumental error in isotope measurements
* Contamination in isotope measurements
* Sample preparation techniques for isotope measurements

# Report location:

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