# Article information:

高熵烧绿石的化学多功能性研究 - Vayer - 2023 - Journal of the American Ceramic Society - Wiley Online Library  
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# Article summary:

1. 高熵和熵稳定氧化物是新材料设计的新兴概念，其中高熵氧化物的特征在于大的配置熵，而熵稳定的氧化物中构型熵在高于临界温度的自由能中占优势。

2. 已知的熵稳定氧化物数量有限，包括岩盐、萤石和烧绿石等结构。

3. 烧绿石结构A 2 B 2 O 7可以描述为萤石结构的超晶胞，其中A和B阳离子沿[1 1 0]方向排列，氧空位位于四面体两个相邻 B 阳离子之间的空隙。

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

作为一篇学术论文，该文章在科学性和客观性方面表现良好。它提供了对高熵和熵稳定氧化物的定义和特征的清晰解释，并介绍了已知的一些化合物及其物理特性。文章还提到了高熵材料的广泛应用前景。

然而，该文章可能存在一些偏见和局限性。首先，它只关注了高熵和熵稳定氧化物的正面特征，没有探讨可能存在的负面影响或风险。其次，虽然文章提到了已知的几种熵稳定氧化物，但并未对这些化合物进行深入比较或评估其优缺点。此外，文章没有涉及到其他类型的新材料设计概念或方法。

总体而言，该文章是一篇有价值的学术论文，但需要更全面地考虑相关问题，并避免过度宣传某些概念或结果。

# Topics for further research:

* Potential negative impacts or risks of high-entropy and entropy-stabilized oxides
* Comparative evaluation of known entropy-stabilized oxides and their advantages and disadvantages
* Other types of new material design concepts or methods
* Limitations or drawbacks of high-entropy materials
* Potential challenges in the synthesis and processing of high-entropy oxides
* Future directions and opportunities for research on high-entropy and entropy-stabilized oxides

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