# Article information:

Optimization of shadow shield and analysis of radiation characteristics for nuclear powered spacecraft - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S0149197022003614>

# Article summary:

1. Nuclear energy has been used in space since the 1960s, with 37 spacecraft equipped with nuclear reactors and hundreds of radioisotope heat sources.

2. Space nuclear power technology integrates many sciences and is a comprehensive frontier science and engineering technology.

3. Shielding objects of nuclear-powered spacecraft mainly consider neutron rays and γ-rays (photons), with materials such as lithium hydride (LiH), Boron carbide (B4C), tungsten (W), and beryllia (BeO) being used for shielding.

# 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:

The article provides an overview of the use of nuclear energy in space, discussing the various designs that have been developed over the years, as well as the materials used for shielding against radiation from nuclear-powered spacecraft. The article is generally reliable, providing a comprehensive overview of the topic without any obvious bias or unsupported claims. However, there are some points that could be further explored in order to provide a more balanced view on the topic. For example, while the article does discuss potential risks associated with using nuclear energy in space, it does not provide any detailed information on how these risks can be mitigated or managed. Additionally, while the article does mention some potential benefits of using nuclear energy in space exploration missions, it does not explore any potential drawbacks or counterarguments to this approach. Finally, while the article does provide some information on different designs for shielding against radiation from nuclear-powered spacecraft, it does not provide any detailed analysis of their effectiveness or efficiency compared to other methods. In conclusion, while this article provides a good overview of the use of nuclear energy in space exploration missions, further research is needed to provide a more balanced view on its potential benefits and drawbacks.

# Topics for further research:

* Nuclear energy in space exploration risks
* Mitigation of nuclear energy in space exploration risks
* Advantages and disadvantages of nuclear energy in space exploration
* Radiation shielding designs for nuclear-powered spacecraft
* Effectiveness of radiation shielding designs for nuclear-powered spacecraft
* Efficiency of radiation shielding designs for nuclear-powered spacecraft

# Report location:

<https://www.fullpicture.app/item/09294ed45f472f9a1dc8510bfd584c3a>