# Article information:

Discrimination of neutrons and gamma rays in plastic scintillator based on pulse-coupled neural network | SpringerLink  
<https://link.springer.com/article/10.1007/s41365-021-00915-w>

# Article summary:

1. Neutron detection technology has become highly important in many areas, such as irradiation facilities, reactors, national defense, biology, geology, medical science and deep-space exploration.

2. Pulse shape discrimination (PSD) has been studied to differentiate between neutrons and gamma rays.

3. A novel n-γ discrimination method based on a pulse-coupled neural network (PCNN) is proposed which outperforms other methods with an outstanding figure of merit (FoM) and short discrimination time consumption.

# 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 provides a comprehensive overview of the importance of neutron detection technology in various fields and the need for n-γ discrimination methods. It then introduces a novel n-γ discrimination method based on a pulse-coupled neural network (PCNN), which is compared with three other existing methods in terms of figure of merit (FoM) and discrimination time. The article is well written and provides detailed information about the different methods used for n-γ discrimination as well as their performance comparison results.

The article does not appear to be biased or one-sided in its reporting; it presents both sides equally by providing an overview of existing methods as well as introducing the new PCNN method. Furthermore, it provides evidence for its claims by citing relevant research papers and experiments conducted to verify the performance of the proposed method. The article also mentions potential risks associated with using plastic scintillators for PSD applications but does not explore them further or provide any counterarguments to these risks.

In conclusion, this article appears to be reliable and trustworthy due to its comprehensive coverage of existing methods for n-γ discrimination as well as its detailed description of the proposed PCNN method and its performance comparison results with other existing methods.

# Topics for further research:

* Neutron detection applications
* Neutron-gamma discrimination techniques
* Pulse-coupled neural network
* Plastic scintillator applications
* Figure of merit evaluation
* Neutron-gamma discrimination risks

# Report location:

<https://www.fullpicture.app/item/7ef8599eab2a78a1f317efdeddb80e1c>