# Article information:

A Low‐Temperature Sodium‐Ion Full Battery: Superb Kinetics and Cycling Stability - Rui - 2021 - Advanced Functional Materials - Wiley Online Library
<https://onlinelibrary.wiley.com/doi/full/10.1002/adfm.202009458?saml_referrer>

# Article summary:

1. Sodium-ion batteries (SIBs) are receiving a great deal of attention for grid-scale stationary energy storage systems due to their abundant sodium resource and low cost.

2. Sodium super ion conductor (NASICON) compounds, such as NaxMy(XO4)3, have been explored as electrode materials for SIBs. Na3V2(PO4)3 (NVP) and NaTi2(PO4)3 (NTP) have been identified as promising cathode and anode materials, respectively.

3. A 3D hierarchical porous architecture was developed using hydrothermal-assisted method to fabricate NVP/CF and NTP/CF full cells, which showed unprecedented performance at low temperature with highly reversible charge/discharge at high rates of 10 and 20 C over 1000 cycles.

# 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 is generally reliable in terms of its content and claims made. The authors provide evidence for their claims by citing relevant research papers that support their arguments. The article also provides detailed descriptions of the methods used to develop the 3D hierarchical porous architecture, which helps to build trustworthiness in the results presented in the paper. Furthermore, the authors discuss potential risks associated with the use of SIBs at low temperatures, which adds to the reliability of the article.

However, there are some points that could be improved upon in order to make the article more trustworthy and reliable. For example, while the authors discuss potential risks associated with SIBs at low temperatures, they do not explore counterarguments or present both sides equally when discussing these risks. Additionally, while they cite relevant research papers throughout the article, they do not provide any evidence for their own claims or conclusions beyond citing other research papers. This could be improved by providing more evidence from experiments conducted by the authors themselves or from other sources that support their claims and conclusions.

In conclusion, while this article is generally reliable in terms of its content and claims made, there are some areas where it could be improved upon in order to make it more trustworthy and reliable.

# Topics for further research:

* Low temperature SIBs risks
* 3D hierarchical porous architecture
* Experimental evidence for SIBs
* Counterarguments for SIBs risks
* Advantages of SIBs
* Applications of 3D hierarchical porous architecture

# Report location:

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