# Article information:

Stack Pressure Considerations for Room‐Temperature All‐Solid‐State Lithium Metal Batteries - Doux - 2020 - Advanced Energy Materials - Wiley Online Library
<https://onlinelibrary.wiley.com/doi/full/10.1002/aenm.201903253>

# Article summary:

1. All-solid-state batteries (ASSBs) have the potential to enable high energy density with the use of lithium metal anodes.

2. This article investigates the mechanical properties of lithium metal and the role of applied stack pressure on shorting behavior in ASSBs.

3. Results suggest that a low stack pressure of 5 MPa allows reliable plating and stripping in a lithium symmetric cell for more than 1000 h, and a Li | Li6PS5Cl | LiNi0.80Co0.15Al0.05O2 full cell is able to cycle over 200 cycles at room temperature.

# 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 “Stack Pressure Considerations for Room‐Temperature All‐Solid‐State Lithium Metal Batteries” by Jean-Marie Doux et al., published in Advanced Energy Materials, is generally trustworthy and reliable as it provides evidence for its claims through experiments conducted by the authors themselves, as well as citing relevant literature to support their findings. The authors also provide detailed descriptions of their methodology and results, which are presented in an unbiased manner without any promotional content or partiality towards any particular point of view.

However, there are some points that could be improved upon in terms of trustworthiness and reliability. For example, while the authors do mention possible risks associated with using lithium metal anodes in ASSBs, they do not explore these risks further or present counterarguments to them. Additionally, while the authors cite relevant literature to support their findings, they do not provide sufficient evidence for some of their claims such as those regarding interfacial properties and morphological properties of buried lithium; this could be addressed by providing more data from experiments conducted by the authors themselves or from other sources. Furthermore, while the authors present both sides equally when discussing different approaches to enabling lithium metal anodes in ASSBs (e.g., increasing electrolyte density vs using protective coating layers), they do not explore other possible approaches that could be taken such as using different types of solid electrolytes or exploring different parameters such as current density or electrolyte porosity that could affect shorting behavior in ASSBs with lithium metal anodes.

In conclusion, while this article is generally trustworthy and reliable due to its detailed descriptions of methodology and results without any promotional content or partiality towards any particular point of view, there are still some areas where it can be improved upon such as providing more evidence for certain claims made and exploring other possible approaches that could be taken when enabling lithium metal anodes in ASSBs.

# Topics for further research:

* Lithium metal anodes in all-solid-state batteries
* Interfacial properties of buried lithium
* Protective coating layers for lithium metal anodes
* Different types of solid electrolytes
* Current density and electrolyte porosity in all-solid-state batteries
* Shorting behavior in all-solid-state batteries with lithium metal anodes

# Report location:

<https://www.fullpicture.app/item/224af64cdad21f2f08d33e6ebf0d494e>