# Article information:

Robust Quantum Anomalous Hall States in Monolayer and Few-Layer TiTe | Nano Letters  
<https://pubs.acs.org/doi/full/10.1021/acs.nanolett.2c01421>

# Article summary:

1. Topological insulators host electrically insulating bulk yet conducting surfaces, and the conductive states are topologically protected by symmetry.

2. Quantum anomalous Hall (QAH) insulators offer a platform to explore exotic quantum physics, such as topological magnetoelectricity and Majorana modes.

3. A robust QAH state has been discovered in 2D tetragonal monolayer and few-layer TiTe systems with high Curie temperatures at or above 650 K and sizeable band gaps of up to 261meV.

# 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 is generally reliable and trustworthy, providing a comprehensive overview of the discovery of a robust quantum anomalous Hall (QAH) state in 2D tetragonal monolayer and few-layer TiTe systems. The article is well-structured, clearly outlining the background information on topological insulators, QAH insulators, and previous research efforts in this field before introducing the new findings on TiTe systems. The authors provide sufficient evidence for their claims through references to relevant literature, as well as detailed descriptions of their computational methods used to identify the TiTe monolayer structure via high-throughput screening.

The article does not appear to be biased or one-sided in its reporting; it presents both sides of the argument equally by providing an overview of previous research efforts before introducing the new findings on TiTe systems. Furthermore, all claims made are supported by evidence from relevant literature or from the authors’ own calculations using density functional theory as implemented in the VASP code.

The only potential issue with this article is that it does not discuss any possible risks associated with these findings or any unexplored counterarguments that could be raised against them. However, given that this is a scientific paper rather than an opinion piece, this omission can be forgiven as it does not detract from the overall reliability and trustworthiness of the article itself.

# Topics for further research:

* Quantum anomalous Hall effect
* Topological insulators
* High-throughput screening
* Density functional theory
* VASP code
* Risks associated with quantum anomalous Hall effect

# Report location:

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