# Article information:

Ultrahigh energy storage in superparaelectric relaxor ferroelectrics | Science  
<https://www.science.org/doi/full/10.1126/science.abi7687>

# Article summary:

1. Pan et al. used phase-field simulations to determine the right combination of bismuth iron oxide, barium titanium oxide, and samarium doping that is likely to generate a material with excellent dielectric properties.

2. The simulations guide a set of experimental measurements showing this system can produce a very high-energy storage by breaking down polar domains to the nanometer scale.

3. These materials could be useful for high-power applications and to suppress failure.

# 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 and trustworthy, as it provides evidence for its claims in the form of phase-field simulations and experimental measurements. The authors also provide detailed information about their research methods and results, which adds credibility to their findings. Furthermore, the authors cite relevant literature throughout the article, which further strengthens their argument.

However, there are some potential biases in the article that should be noted. For example, the authors do not explore any counterarguments or alternative perspectives on their findings, which could lead readers to draw biased conclusions from the article. Additionally, while the authors provide evidence for their claims in terms of simulations and experiments, they do not discuss any potential risks associated with using these materials for high-power applications or suppressing failure. This lack of discussion may lead readers to overlook potential risks associated with using these materials in such applications.

In conclusion, while this article is generally reliable and trustworthy due to its evidence-based approach and detailed discussion of research methods and results, there are some potential biases that should be noted when reading it.

# Topics for further research:

* High-power applications risks
* Failure suppression risks
* Alternative perspectives on phase-field simulations
* Counterarguments to phase-field simulations
* Experimental measurements for high-power applications
* Literature review of phase-field simulations

# Report location:

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