# Article information:

Hydration heat evolution of Portland cement paste during unsteady steam curing process: Modelling and optimization - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S0040603120306997>

# Article summary:

1. A numerical method was proposed to analyze the hydration of steam curing cement.

2. The effect of steam curing regimes on the hydration of cement was investigated quantitatively.

3. An optimized steam curing regime was put forward to mitigate the heat damage.

# 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 “Hydration Heat Evolution of Portland Cement Paste During Unsteady Steam Curing Process: Modelling and Optimization” is a well-researched and comprehensive study on the effects of steam curing regimes on the hydration process of Portland cement. The authors have provided a detailed description of their proposed numerical method, which uses instantaneous activation energy and an iterative algorithm to improve accuracy in analyzing the hydration heat release characteristics of Portland cement under atmospheric steam curing conditions. The validity of this method is confirmed by experimental results, and it can be used to rapidly analyze the effect of steam curing regimes on hydration heat release behavior and optimize the hydration process in order to mitigate or avoid heat damage in concrete.

The article is generally reliable and trustworthy, as it provides a thorough overview of its research methods, results, and conclusions. It also cites relevant literature throughout its discussion, providing evidence for its claims and arguments. Furthermore, it does not appear to be biased or one-sided in its reporting; rather, it presents both sides equally by discussing both potential benefits and risks associated with steam curing concrete. Additionally, there are no unsupported claims or missing points of consideration that could potentially undermine its credibility or reliability.

In conclusion, this article is reliable and trustworthy due to its comprehensive coverage of research methods, results, conclusions, citations from relevant literature, balanced presentation of both sides equally without bias or one-sidedness, lack of unsupported claims or missing points that could undermine its credibility or reliability.

# Topics for further research:

* Portland cement hydration process
* Steam curing concrete
* Hydration heat release behavior
* Activation energy modeling
* Iterative algorithm optimization
* Heat damage mitigation in concrete

# Report location:

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