

Calculate the molar specific heat of sodium chloride using the Debye model

Hanan A. Abdul Rahman, Sumaira S. Shakonah, Afaf S. Al-Zawaly

Department of Physics, College of Education (Abu Issa), University of Zawia, Libya

Corresponding Authors Email: h.abdulrahman@zu.edu.ly; S.Shakonah@zu.edu.ly; a.zawaly@zu.edu.ly

Abstract

The Debye model for specific heat was studied on sodium chloride in its condensed state, which is considered an inorganic material. The main objective of this research is to determine the behavior of the molar specific heat of sodium chloride (NaCl) as a function of absolute temperature. The Debye temperature for sodium chloride was found to be 277.5 K. Additionally, the curve of molar specific heat as a function of absolute temperature can be plotted with the help of computer programming in MATLAB. The crystal structure of sodium chloride is in the form of colorless crystals in its solid state. This crystal belongs to the face-centered cubic system, and the crystalline structure of sodium chloride can be considered as consisting of two interpenetrating face-centered cubic sublattices, one for sodium ions and the other for chloride ions. These two sublattices are displaced relative to each other by half the length of the cube's side.

Keywords: Sodium chloride, Debye model, Debye temperature, specific heat, primitive cell

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**Innovative Pedagogical Approaches for Enhancing Scientific Literacy in Public Science
Education**

Aml Ali Mohammed Mousay, Arwa Miloud Shaban

Zawia University, College of Education, Abu-Isa, English Department, Zawia, Libya

Corresponding Authors Email: a.mousay@zu.edu.ly; a.algammudi@zu.edu.ly

Abstract

This study explores innovative pedagogical approaches aimed at enhancing scientific literacy in public science education. By exploring contemporary teaching methods and their impact on students' understanding and application of scientific concepts, the study highlights the importance of integrating interdisciplinary techniques, technology-enhanced learning, and experiential activities. The research underscores the role of educators in fostering a learning environment that encourages critical thinking, problem-solving, and effective communication of scientific ideas. Through a comprehensive review of existing literature and case studies, this paper provides insights into best practices and practical strategies for educators to implement in their classrooms to promote scientific literacy.

Keywords: Scientific Literacy, Public Science Education, Pedagogical approaches, Interdisciplinary Techniques, Experiential Learning

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