



an Open Access Journal by MDPI

Different Kinds of Hydrogen Bonds in Crystal Structures

Guest Editors:

Dr. Lilianna Checinska

Department of Physical Chemistry, Faculty of Chemistry, University of Lodz, Pomorska 163/165, 90-236 Lodz, Poland

Prof. Dr. Magdalena Małecka

Department of Physical Chemistry, Faculty of Chemistry, University of Lodz, Pomorska 163/165, 90-236 Lodz, Poland

Deadline for manuscript submissions: closed (30 June 2024)

Message from the Guest Editors

A hydrogen bond is a special type of electrostatic force attraction that is somewhere between intermolecular or intramolecular, not a covalent bond to a hydrogen atom. It results from the attractive force between a hydrogen atom covalently bonded to a very electronegative atom and another very electronegative atom, such as nitrogen (N), oxygen (O), or fluorine (F). Hydrogen bonds play a crucial role in physical properties as a kind of weak interaction in crystals, such as proton conductivity, deuterium effect, and geometric H/D isotope effects. Taking ferroelectric KH2PO4 as an example, the phase transition temperature of KD2PO4 shows a 107 K upshift after deuteration. Additionally, in some other cases, the physical property exhibits a weak coupling correlation with the deuteration. Therefore, it is vital to understand the function of the hydrogen bond in crystal structures.

The current Special Issue on "Different Kinds of Hydrogen Bonds in Crystal Structures" focuses on the hydrogen bond effect in crystals, with a varied scope of hydrogen bond type, characterization, structure–property relationship, etc.









an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Alessandra Toncelli Department of Physics, University of Pisa, 56126 Pisa, Pl, Italy

Message from the Editor-in-Chief

Welcome to *Crystals*, the journal dedicated to the fascinating world of crystallographic research! Crystals are more than mere decorative elements; they hold the key to understanding the fundamental structure of matter. Our mission is to explore the crucial significance of this research across various fields. From medicine to technology, chemistry to geology, crystals play a vital role. Their structure provides insights into new advanced materials, innovative drugs, and groundbreaking technologies. Through *Crystals*, we delve into the microscopic world to discover solutions that will shape the future. Join us on a journey through the *Crystals*, where science merges with beauty and innovation.

Author Benefits

Open Access: free for readers, with article processing charges (APC) paid by authors or their institutions. **High Visibility:** indexed within Scopus, SCIE (Web of Science), Inspec, Ei Compendex, CAPlus / SciFinder, and other databases. **Journal Rank:** JCR - Q2 (Crystallography) / CiteScore - Q2 (Condensed Matter Physics)

Contact Us

Crystals Editorial Office MDPI, Grosspeteranlage 5 4052 Basel, Switzerland Tel: +41 61 683 77 34 www.mdpi.com mdpi.com/journal/crystals crystals@mdpi.com X@Crystals_MDPI