Multifunctionality of Layered Materials

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Propositions

accompanying the thesis

Multifunctionality of Layered Materials

by

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1. The physical properties of layered materials are mainly determined by the nature of the planes in which the main connectivity lies. (Chapter 1)
2. Layered materials possess strong chemical bonding in two dimensions, while the interactions between the separated layers are much weaker. (Chapter 1)
3. Crystal structure studies require perseverance, flexibility, and a "fresh-eye". (Chapter 2)
4. High symmetry structures may be stabilized by entropy-driven effects in multicomponent alloys. (Chapter 3)
5. The breaking of inversion symmetry in layered hybrid perovskites is related to the rotational degree of freedom of the organic cations. (Chapter 4)
6. A magnetocaloric effect is confirmed in ferromagnetic layered organic-inorganic perovskites due to the large magnetic entropy change near the critical temperature. (Chapter 5)
7. The magnetic exchange energy in layered hybrid perovskites can be tuned by introducing local anion vacancies. (Chapter 6)
8. Determination of the crystal structures of layered organic-inorganic perovskites is often challenging due to the twinning often found in these systems. (Chapter 4, 5, 6)
9. "Nothing in life is to be feared. It is only to be understood." – Marie Curie
10. "The balancing act of motherhood and a career, and being a wife, is something that I don't think I'll ever perfect, but I love the challenge of it." – Kerri Walsh Jennings
11. "Be patient; indeed, the (best) outcome is for the righteous." (11:49)