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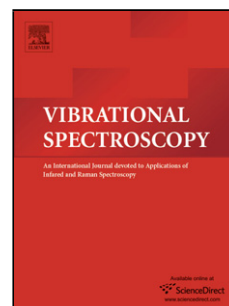
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The cation and the anion vacancies in cadmium diphosphide: a NIR-VIS, IR, and Raman study

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Abstract

The present work studies the impact of the cadmium and phosphorus vacancies on the properties of the tetragonal cadmium diphosphide that is promising for the optoelectronic and photovoltaic applications. Obtained results of the NIR-VIS transmittance, IR reflectance, and Raman scattering measurements have shown that phosphorus and cadmium vacancies provide a rich playground for the design of the optical and vibrational properties of cadmium diphosphide.

Keywords: Cadmium diphosphide; vacancies; optical bandgap; phonons;

1. Introduction

Binary and ternary diphosphides have been the topic of research in recent years due to their varied possible applications and interesting properties.

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