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Patent Search

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Abstract:

Exploring bismuth-based double perovskites for solar cells using machine learning perspective is the proposed invention. The proposed invention focuses on understanding the efficiency of bismuth based double perovskites in solar cells. The invention focuses on analyzing the parameters of bismuth based double perovskites for solar cells using algorithms of machine learning.

Complete Specification

Description:[0001] Background description includes information that may be useful in understanding the present invention. It is not an admission that any of the information provided herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art.

[0002] Machine learning is a branch of artificial intelligence that uses statistical algorithms to learn from data and generalize to unseen data. Machine learning enables machines to automatically learn from data and past experiences, while identifying patterns to make predictions with minimal human intervention.

[0003] A number of different types of double perovskites solar cell analysis systems that are known in the prior art. For example, the following patents are provided their supportive teachings and are all incorporated by reference.

[0004] Critical review of machine learning applications in perovskite solar research: - The astonishing progress achieved in perovskite solar cells in recent years has coincided with the growing interest in machine learning (ML) for material discovery, and the number of papers reporting the use of ML in perovskite solar research has been increased significantly in last two years. ML has been used for various purposes such as discovering new perovskites by screening the large computational or experimental datasets, analyzing the spectroscopic data augmented by data extracted from databases, determining conditions for higher efficiency or stability using experimental data and identifying the basic trends in perovskite solar cell technology by analyzing the published papers and patents. This communication aims to review the research articles as well as the perspectives, comments and opinions, to assess the current directions and summarize the challenges and opportunities for the future works in the field.

[0005] A solar cell, also known as a photovoltaic cell, is an electronic device that converts light energy into electricity. Solar cells are made of semiconductor materials like gallium arsenide, silicon, and cadmium telluride. Solar cells can operate under sunlight or artificial light. The proposed invention focuses on analyzing the bismuth

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