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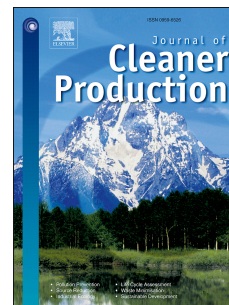
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A review of Internet of Things for smart home: challenges and solutions

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Highlights

• **A review of state-of-the-art Internet of Things applications for smart grid and home**

• **Definition of smart home holistic framework with key features from literature review**

• **General description of a Smart Home Management Model based on the holistic framework**

• **Discussion of current and future challenges for Internet of Things based solutions**

Abstract

Although Internet of Things (IoT) brings significant advantages over traditional communication technologies for smart grid and smart home applications, these implementations are still very rare. Relying on a comprehensive literature review, this paper aims to contribute towards narrowing the gap between the existing state-of-the-art smart home applications and the prospect of their integration into an IoT enabled environment. We propose a holistic framework which incorporates different components from IoT architectures/frameworks proposed in the literature, in order to efficiently integrate smart home objects in a cloud-centric IoT based solution. We identify a smart home management model for the proposed framework and the main tasks that should be performed at each level. We additionally discuss practical design challenges with emphasis on data processing, as well as smart home communication protocols and their interoperability. We believe that the holistic framework ascertained in this paper can be used as a solid base for the future developers of Internet of Things based smart home solutions.

Keywords

Internet of Things, smart home, holistic framework, smart grid.

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