

Energy Efficiency in Smart Buildings through IoT Sensor Integration

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Internet of Things (IoT) deployments offer a much higher value proposition if these can function in the context of smart buildings. Such advanced information and communication technology (ICT) applications in commercial buildings, schools, libraries, shopping centers, etc. offer low cost but highly effective monitoring and control opportunities. Sensors deployed in key locations can monitor the building environment in real-time, collect information for intelligent decision making, and facilitate various services. An IoT sensor platform has been developed that provides a unified communication platform which can integrate information from disparate sources and provide one control hierarchy. It is a powerful, low-cost, open-architecture software platform that can monitor and control major electrical loads (e.g., HVAC, lighting and plug loads), as well as solar PV systems, energy storage units and other IoT sensors in commercial buildings. The platform can provide new or legacy buildings with a building automation system (BAS) or connect with existing BAS systems in large and small commercial buildings. This platform leverages machine learning algorithms to draw insights from a deployed building's historical operating data and occupant preferences to save energy (kWh) while increasing occupant comfort. This also allows buildings to reduce peak demand (kW) through direct communication with utilities using demand response protocols such as openADR.

Invited talk, EDS

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