قَالَ تَعَالَىٰ: ﴿ وَيَسْـَٔلُونَكَ عَنِ ٱلرُّوحِ ۖ قُلِ ٱلرُّوحُ مِنْ أَمْرِ رَبِّى وَمَآ أُوتِيتُم مِّنَ ٱلْعِلْمِ إِلَّا قَلِيلًا ﴾

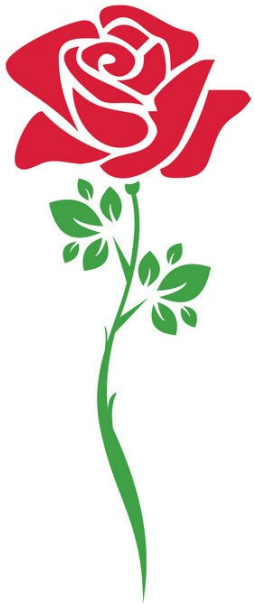
صدق الله العظيم

الإسراء الآية
٨٥

Dedication

To my lovely mother, my dear father, brothers and sisters.
To my friends, relatives, colleagues and classmates.
To anyone who helped me during my journey to achieve my goals.

I dedicate this work to you



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To Eng. Hassan Elrasheed thank you, we highly appreciate every minute you spent with us.

Abstract

Sudan suffers from shortage in power generation and instability in the grid, moreover there are many of grid areas, therefore it is important to use renewable sources of power represented here in solar energy.

A research was done on the off-grid location, and a village was chosen to install the system depending on it is population and power consumption rates.

Providing a reliable and stable power supply for an off-grid area with relatively economic cost.

مستخلص

تعاني دوله السودان من نقص في التوليد وعدم استقراريه في الشبكه ، كما ان هنالك العديد من المناطق خارج الشبكه ، لذلك من المهم ان يتم استخدام مصادر طاقة متجددة ممثله هنا في الطاقة الشمسية.

تم اجراء دراسة عن المناطق التي ينعدم فيها الإمداد الكهربي وتم اختيار القرية التي سيتم تركيب النظام بها بناءا على عدد السكان ومعدل استهلاك الطاقة في المنطقة.

توفير امداد معتمد ومستقر في الطاقة لمنطقة خارج شبكة الإمداد الكهربي بتكلفة اقتصادية أقل نسبياً.

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LIST OF ABBREVIATIONS

DC	Direct Current
AC	Alternating Current
PID	Proportional-Integral-Derivative
PV	Photovoltaic
EJ	ExaJoules

LIST OF FIGURES