

# Nanopillars Making Solar Cells More Efficient 2016

<https://marketpublishers.com/r/N690C8F2A10EN.html>

Date: August 2016

Pages: 85

Price: US\$ 700.00 (Single User License)

ID: N690C8F2A10EN

## Abstracts

An effort by humans to harness the abundant source of solar energy available around us has manifested in the form solar energy being converted to many applications as diverse as heat channelizing, electricity conversion, electro mechanical applications and many more as these. The dream of solar energy for human applications was realized in the early part of this century by the invention of solar cells which when arranged in photovoltaic arrays deliver power for bigger applications.

The next leap of invention in this direction is “Nanopillars and Solar Cells”. Aruvian Research’s report Nanopillars Making Solar Cells More Efficient earmarks the immense potential that this technology holds for the future of mankind and the crucial impact it will have on the process of introduction of solar energy into large scale arenas of the industrialized economies.

Aruvian Research’s report on Nanopillars and Solar Cells initiates with a strong theoretical understanding of the Solar Cell system and their subsequent propagation into photovoltaic systems including their applications derived from generational leaps as first to third generation cells. The report presents the entire gamut of PV cells in a structured family tree for easy interpretation and also delves into the applications of PV Technology in isolated environment.

Aruvian Research’s report also devotes an entire in depth section to the technical aspects of Nanopillars and Solar Cell systems including their history as well as mechanism, general operation principles and the new innovations in architecture design of Nanopillars and Solar Cells which have opened up new markets for solar power systems. These are further explained in the efficient design choices of various configurations and new ideas contributed in this field.

The report Nanopillars Making Solar Cells More Efficient is a very comprehensive tool

for understanding this technology in a in depth manner and deliver thought provoking views on the marvels of this field which is nature's helping hand lent to mankind in order to preserve a way of life which is sustainable as well as in sync with our environment.

## Contents

### **A. EXECUTIVE SUMMARY**

### **B. INTRODUCTION TO PHOTOVOLTAICS**

- B.1 Overview
- B.2 Historical Background of Solar Cells
- B.3 Looking at Solar Electricity
- B.4 Photovoltaic Systems
- B.5 Looking at the Balance of System (BOS)
- B.6 Analyzing the 3 Generations of Photovoltaic Cells
  - B.6.1 First Generation PV Cells
  - B.6.2 Second Generation PV Cells
  - B.6.3 Third Generation PV Cells
- B.7 What are Concentrator Cells?
- B.8 Analyzing Concentrated Photovoltaics
- B.9 Applications of Solar Cells
- B.10 Types of Solar Cells
- B.11 PV Technology in Isolated Generation
- B.12 Looking at Thin Film Solar Cells
- B.13 PV Family Tree – A Diagrammatic Representation

### **C. GLOBAL MARKET OVERVIEW OF SOLAR PV CELLS**

- C.1 Market Profile
- C.2 Market Size
- C.3 Growth Patterns of the Market
- C.4 Market Statistics – Production Side
- C.5 Commercialization Potential & Market Development
- C.6 Future of the Market

### **D. INTRODUCTION TO NANOPILLARS & METAMATERIALS**

- D.1 What are Nanopillars?
- D.2 What are Metamaterials?
- D.3 Electromagnetic Metamaterials
- D.4 Terahertz Metamaterials
- D.5 Metamaterial Antennas

- D.6 Acoustic Metamaterials
- D.7 Seismic Metamaterials
- D.8 Tuneable Metamaterials
- D.9 Photonic Metamaterials
- D.10 Nanopillars and Reversing of Optical Behavior

## **E. OVERVIEW OF NANOPILLAR SOLAR CELLS**

- E.1 Overview
- E.2 How Nanopillars Make Good Solar Cells
- E.3 How Nanopillars Make Cheaper and More Efficient Solar Cells

## **F. LOOKING AT 3-D NANOPILLAR-ARRAY PV**

## **G. LOOKING AT IMPRINTED HIGH DENSITY POLYMER NANOPILLARS FOR ORGANIC SOLAR CELLS**

- G.1 Overview
- G.2 Manufacturing Nanoporous Silicon Molds
- G.3 Nanoimprint of Polymer Nanopillars and Nanopores
- G.4 Manufacturing of Organic Solar Cells
- G.5 Summing Up

## **H. CASE STUDY: PROJECT LOOKING AT INORGANIC NANOCOMPOSITE SOLAR CELLS BY ATOMIC LAYER DEPOSITION**

## **I. APPENDIX**

## **J. GLOSSARY OF TERMS**

## I would like to order

Product name: Nanopillars Making Solar Cells More Efficient 2016

Product link: <https://marketpublishers.com/r/N690C8F2A10EN.html>

Price: US\$ 700.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/N690C8F2A10EN.html>