

بسم الله الرحمن الرحيم

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صدق الله العظيم

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Dedication

To my father and my mother

To my brothers and sisters

To the spirit of my teacher Khalid Abdul Aziz

To my friends and colleagues

To all who is help me

Acknowledgment

At first my great thank and love to Allah who helps me to prepare this research.

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Abstract

The Solar cells are fabricated from (fluoride Tin oxide (FTO) glass / polymer /dye / Copper) was used in each cell of a different types of dyes, natural dye (Chlorophyll - Helba) and chemical dye (Erythrosin - Dry Ink). And studied the efficiency and fill factor for all samples produced also studied the relationship between intensity of light and efficiency of the cell and found that the intensity of light does not affect efficiency of the cell. Also, for these samples it's found that the efficiency of cell using Erythrosin is 6%, fill factor is 0.95. The efficiency of cell using Dry Ink is 11%, fill factor is 0.87. And the efficiency of cell using Chlorophyll is 19%, fill factor is 0.90. And the efficiency of cell using Helba is 14%, fill factor is 0.88. The efficiency and fill factor were different with use different types of dyes. It also found that natural dyes (Chlorophyll - Helba) has more voltage and efficiency than chemical dyes (Erythrosin - Dry Ink).

المستخلص

تم تصنيع خلايا شمسية من (زجاج الفلوريد تاين او كسايد FTO) (/ البوليمر / الصبغة / النحاس) حيث استخدم في كل خلية صبغة مختلفة عن الخلية الأخرى وكانت الصبغة مقسمة الي نوعين طبيعية (الكلوروفيل - الحلبة) والاخرى كيميائية (الإكروكروم - الحبر الجاف) ودرست الكفاءة وعامل الملء لكل العينات المنتجة كما درست العلاقة بين شدة الاستضاءة وكفاءة الخلية ووجد ان شدة الاستضاءة لا تؤثر علي كفاءة الخلية . وايضا وجد ان كفاءة الخلية المصنوعة من صبغة الإكروكروم تساوي 6% وعامل الملء 0.95 والمصنوعة من الحبر الجاف 11% وعامل الملء 0.87 والمصنوعة من الكلوروفيل 19% وعامل الملء 0.90 والمصنوعة من الحلبة 14% وعامل الملء 0.88. ووجد أن الكفاءة وعامل الملء وفولتية الدائرة المفتوحة تختلف باختلاف الصبغات كما وجد ان الصبغات الطبيعية (الكلوروفيل - الحلبة) اكثر كفاءة من الصبغات الكيميائية (الإكروكروم - الحبر الجاف).

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