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.

I would like to pass my great thank to my supervisor: Prof: Mubarak Dirrar.

Also thanks to A: Ahmed Hamza (Khartoum University – Faculty of Science, Department of Chemistry – Department of glass formation) to assist me in the preparation of glass.

Also thanks to A: Ahmed Abdel Azim (Sudan University – Faculty of Science, Department of Chemistry) to assist me in the preparation of dyes.

Also thanks to A: Abdelsakhi Suleiman (Alneelain University – Department of physics) for assistance given to do the experimental work.

Also thanks to any teacher help me and my colleagues for this advice to help my master degree.

Abstract

The Solar cells are fabricated from (fluoride Tyne oxide (FTO) glass / polymer /dye / Copper) was used in each cell of a different types of dyes, natural dye (Chrolorpheel – Helba) and chemical dye (Ecerchrom – Dry Ink). And studied the efficiency and fill factor for all samples produced also studied the relationship between intensity of ligh and efficiency of the cell and found that the intensity of ligh does not affect efficiency of the cell. Also, for these samples it’s found that the efficiency of cell using Ecerchrom is 6%, fill factor is 0.95. The efficiency of cell using Dray Ink is 11%, fill factor is 0.87. And the efficiency of cell using Chrolorpheel 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 (Chrolorpheel – Helba) has more voltage and efficiency than chemical dyes (Ecerchrom – Dry Ink).

المستخلص

تم تصنيع خلايا شمسية من (زجاج االفلوريد تاين اوكسايد FTO)) / البوليمر / الصبغة /االنحاس) حيث استخدم في كل خلية صبغة مختلفة عن الخلية الأخري وكانت الصبغة مقسمة الي نوعين طبيعية(الكلوروفيل - الحلبة)والاخري كيميائية (الإكروكروم – الحبر الجاف) ودرست الكفاءة وعامل الملء لكل العينات المنتجةكمادرست 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 بإختلاف الصبغاتكما وجد ان الصبغات الطبيعية (الكلوروفيل – الحلبة) اكثر كفاءة من الصبغات الكيميائية (الإكروكروم – الحبر الجاف).

Contents

Chapter Three

Chapter Four

Table and Figures

No	Figures	Page

Chapter One

Chapter two

Chapter Three

Chapter Four.

Table