



*****والله أخرجكم من بطون**

أمهاتكم

لا تعلمون شيئاً

وجعل لكم السمع والأبصار

والأفئدة لعلكم تشكرون (78)***

سورة النحل

صدق الله العظيم

Dedication

:Dedicated to

**My father's
soul**

My mother

**My brother
And
sister**

Wafa

۲۹

Acknowledgment

I would like to express my deep gratitude to my supervisor Dr Mohammed Abed Elkareem for his guidance without whose help this work would be difficult if not impossible to accomplish. Also, I wish to express my deepest respect to my cosupervisor, Dr Ahmed Hassan Sabah Elkheir whose guidance is inexpressibly precious.

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Thanks are also extended to all my friends for their invaluable support. In particular I feel indebted to someone whose words pushed me to continue this work and to go on.s

Abstract

The flowers of *Hibiscus sabdarifa* were extracted with acidified methanol. The Anthocyanin of *Hibiscus sabdarifa* was obtained as red needles from absolute ethanol.

A dye laser operating at 520 nm was used to bleach the red-colored anthocyanin. A mixture of the anthocyanin and triethylamine was irradiated with laser for 40 minutes. Under such conditions the

anthocyanin was excited to the triplet state which was a strong oxidant. The anthocyanin then oxidizes triethylamine and reduces to a colourless radical.



(Red)



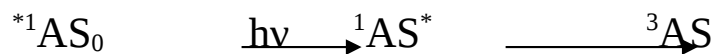
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ملخص البحث

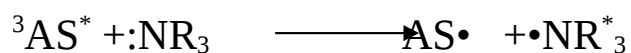
تم استخلاص الأنثوسيانين من أزهار نبات الكركدى بواسطة الميثانول المحمض . وتمت تنقيته بواسطة البلورة بالايثانول البحث . استخدم ليزر الصبغة ذو الطول الموجى 520 نانومتر لتبييض الأنثوسيانين الأحمر اللون.

شع خليط من الأنثوسيانين و الامين ثلاثى الايثيل بواسطة الليزر لمدة 40 دقيقة. تحت تلك الظروف هذه العينة إمتصت ضوء الليزر وانتقلت إلى مستويات الطاقة العليا المثارة (Triplet state) التى تعتبر عاملا مؤكسدًا أفضل من المستويات الأرضية.

المستويات العليا المثارة للأنثوسيانين (Triplet state) تؤكسد الإمين ثلاثي الإيثيل. وكنتيجة لهذه العملية تم إختزال الأنثوسيانين إلى Radical عديم اللون. يمكن تلخيص هذه العملية بالمعادلة التالية:



(Red)



(Colourless)

INDEX

.NO	Contents	.Page No
1	الآية	i
2	Dedication	ii
3	Acknowledgment	iii
4	Abstract	iv
5	ملخص البحث	v
6	Index	vi-x

Chapter1 (Introduction)

7	1.1 Basic concepts	1
8	1.1.1 Spontaneous emission	1
9	1.1.2 Stimulated emission	2
10	1.1.3 Absorption.	3
11	1.1.4 Population Inversion	3
12	1.1.5 Pumping	4
13	1.1.6 Active medium	4
14	1.1.7 Feed back mechanism	4
15	1.2 Laser properties	5
16	1.2.1 Radiance.	5
17	Coherence 1.2.2	6
18	Power 1.2.3	6
19	Monochromaticity 1.2.4	6
20	1.2.5 Collimation	7
21	Laser types 1.3	7
22	Solid state lasers 1.3.1	7
23	Ruby laser 1.3.1.1	7
24	Neodymium lasers 1.3.1.2	7
25	Gas lasers 1.3.2	8
26	1.3.2.1 Nitrogen laser	8
27	Semi conductor lasers 1.3.3	9
28	Liquid dye laser 1.3.4	9
.NO	Contents	.Page No
29	Chemical application of laser 1.4	15
30	Laser initiated reactions 1.4.1	15
31	Purification of materials by laser 1.4.2	17
32	Flash photolysis 1.4.3	18
33	Laser light scattering application 1.4.4	18
34	Laser femto second chemistry 1.4.5	19
35	Lasers induced chemical reaction 1.4.6	19
36	Oxidation and Reduction reactions 1.5	21

37	Flavonoids 1.6	22
38	Anthocyanins 1.7	23
39	Classes of anthocyanin glycosides 1.7.1	24
40	Isolation and identification 1.7.2	25
41	Quantitative measurement 1.7.3	25
42	.Synthesis 1.7.4	25
43	Structure and reactions 1.7.5	26
44	Structure 1.7.5.1	26
45	Reactions 1.7.5.2	28
46	Reaction with bisulphate 1.7.5.2.1	28
47	Peroxide oxidation 1.7.5.2.2	29
48	.Reduction 1.7.5.2.3	29
49	Degradation 1.7.5.2.4	29
50	Photobleaching 1.8	30
51	Applications 1.8.1	32
52	Hibiscus sabdarifa 1.9	36
(Chapter 11 (Experimental work		
52	2.1 Extraction of anthocyanins	37
53	2.2 Experimental setup.	37
54	2.2.1 Nitrogen laser	39
55	Dye laser 2.2.2	39
56	2.2.3 sample cell	41

.NO	Contents	.Page No
(Chapter 111 (Results & Discussion		
57	Reults& Discussion.3	42-49
58	Conclusion	50
59	Future work	50
60	References	51-53

List of Figures

.No	Figures	.Page No
1	Figure(1): spontaneous emission	1
2	Figure (2): Stimulated emission	2
3	Figure (3): Absorption of energy	3
4	Figure (4): the main components of laser scheme	5

5	Figure (5): coherent and collimated laser light vs. ordinary light	6
6	Figure (6): Schematic energy level diagram and pumping cycle in dye molecule	10
7	Figure (7): shows the basic design of the dye laser cavity	13
8	Figure (8): schematic diagram of laser-induced chemical reactions	20
9	Figure (9): Monitoring the fluorescence before photobleaching	43
10	Figure (10): Monitoring the fluorescence after photobleaching	34
11	Figure (11): Monitoring the recovery of fluorescence after photobleaching	35
12	Figure (12): The components of the dye laser.	38
13	Figure (13): sketch diagram of the main .components of the dye laser	38
14	Figure (14): The nitrogen laser	39
15	Figure (15): The dye laser	39
16	Figure (16): the components of the dye laser cavity	40
18	Figure (17): the absorption spectrum of anthocyanin in methanol	43
19	Figure (18): Sample after irradiation ((40mintue	45
20	Figure (19): Sample after irradiation (70 (minute	46
21	Figure (20): Sample after irradiation (110	47

	(minute	
22	Figure (21): Sample after irradiation (140 (minute	48
23	Figure (22): Sample after irradiation (180 (minute	49

List of Tables

No.	Tables	.Page No
1	Table (1): Some solid state lasers	7
2	Table (2): Some gas lasers	8
3	Table (3): Some Dye Lasers	21
4	Table (4): Parameters of a typical dye laser	14
5	Table (5): some naturally occurring anthoyanidins	24
6	Table (6): specification of sample cell	41