

(19)



(12)

(10)

(45)

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(21)	201910664446.7	(56)
(22)	2019.07.23	CN 105409561 A, 2016.03.23
(65)		CN 104472181 A, 2015.04.01
	CN 110235556 A	WØ 2018/037281 A1, 2018.03.01
(43)	2019.09.17	CN 103053397 A, 2013.04.24
(73)		" UV-A UV-B
	453007	" .
	46	.2014, 19 ( 2 ), 86-94 .
(72)		" .
(74)		.2010, 23 ( 6 ), 2124-
		2128 .
	11901	

(51) Int. Q .  
 A01C 1/00(2006.01)

(54)

(57)

	<sup>12</sup> C <sup>6+</sup>	
	UV B	x
8 15		
	<sup>12</sup> C <sup>6+</sup>	
	UV B	x
	UV B	

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1.  $^{12}\text{C}^{6+}$  UV B

x  $^{12}\text{C}^{6+}$  4 8 0.8 1.2 C

30 40 MeV/u 250 500 nGy 20 30 nGy/min

UV B 20 W 12 RS 280-320 nm UV B

50 cm UV B 20.5  $\mu\text{W}/\text{cm}^2$  11:00 0.12  $\text{kJ}/\text{m}^2/\text{day}$

17 22

x 2.0 GeV 30 40 mA 0.5 2.5 KeV

$10^{11}/\text{s}$  UV B 15 20 s 30 60 min

UV B

3 1

2. 1 UV B

[ 0001]

[ 0002]

[ 0003]

2

OH H<sub>2</sub>O<sub>2</sub>

:

VE 50

Vc  
OH

[ 0004]

[ 0005]

[ 0006]

[ 0007]

[ 0008]

<sup>12</sup>C<sup>6+</sup>

UV B

x

[ 0009]

C

<sup>12</sup>C<sup>6+</sup>  
30 40 MV/u

4 8 0.8 1.2

[0010]				250 500mGy	20
30mGy/min					
[0011]			UV B	20W 12RS, 280-320nm	
UV B			50cm UV B	20. $\mu$ W/cm <sup>2</sup>	11:
00	0.12	0.436KJ/m <sup>2</sup> /day			
			10min	0.12KJ/m <sup>2</sup> /day	
20min		0.24KJ/m <sup>2</sup> /day		30min	0.36KJ/m <sup>2</sup> /
day	40min		0.48KJ/m <sup>2</sup> /day		17 22
[0012]		1J	(Wm <sup>2</sup> )*	(s)	
[0013]	$\mu$ W/cm <sup>2</sup>	0.01Wm <sup>2</sup>			
[0014]			x		2.0GeV
30 40mA,	0.5 2.5KeV		10 <sup>11</sup> /s	UV B	
15 20s	30 60min		UV B		
[0015]			UV B		
[0016]				2.9wt	
3.1wt	3.8wt	0.05wt		0.0005wt	0.05wt
0.0004	0.0003				
[0017]					3:1
[0018]					
[0019]	15			3	
	[0				

[0028]

[0029]

[0030] Z<sub>1</sub> Z<sub>1</sub> pđ  
[0031] Uđ (E<sub>đ</sub> ! or 1) & u

<sup>12</sup>C<sup>6+</sup>

<sup>12</sup>C<sup>6+</sup>

5 1

C

40 MeV/u

250 nGy

20 nGy/min

[0032] (2)

3: 1

30cm 45cm

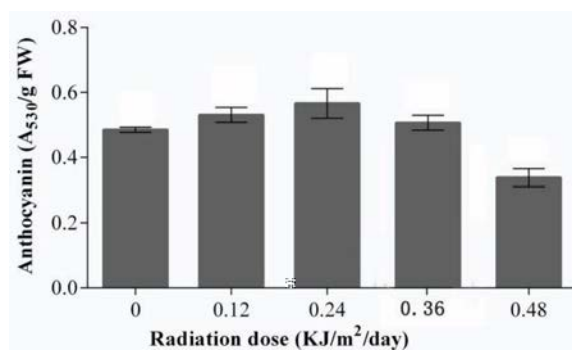
9.8	300mGy	300mGy			
[0038]	UV B			6 8.	
[0039]	6 8				
[0040]	6 8	1	UV B		0.12KJ/m <sup>2</sup> /day
0.36KJ/m <sup>2</sup> /day	0.48KJ/m <sup>2</sup> /day (		6 7 8)		
1					I <sub>2</sub> KI
			1 3	UV B	
					0.24KJ/m <sup>2</sup> /
day	UV B	0.48KJ/m <sup>2</sup> /day			UV B
	0.436KJ/m <sup>2</sup> /day	1.6			
[0041]	1:				
[0042]	(1)				
[0043]	(2)			3: 1	
	30cm 45cm				
[0044]	(3)			20W12RS, 280-320nm	UV B
		50cm UV B		20.5μ Wcm <sup>2</sup>	11 00
				2.9wt	
3.1wt	3.8wt	0.05wt	0.0005wt	0.05wt	
0.0004	0.0003			5mi n	30mi n
x	x		2.0GeV	30 40mA,	
0.5 2.5KeV	10 <sup>11</sup> /s	UV B		20s	
60mi n	UV B				
			2	s	

		50cm UV B	20.5 $\mu$ W/cm <sup>2</sup>	11 00
3.1wt	3.8wt	0.05wt	0.0005wt	0.05wt
0.0004	0.0003			5min 60min
	UV B			
		2	20	UV B
5min			0.12KJ/m <sup>2</sup> /day	
[0050]	1	x		
		I <sub>2</sub> KI		
	1	11.3	1 14.5	
	x	UV B	UV B	
[0051]	3			
[0052]	(1)			
[0053]	(2)		3:1	
	30cm 45cm			
[0054]	(3)		20W12RS, 280-320nm	UV B
		50cm UV B	20.5 $\mu$ W/cm <sup>2</sup>	11 00
			2.9wt	
3.1wt	3.8wt	0.05wt	0.0005wt	0.05wt
0.0004	0.0003			5min 60min
	UV B			
		2	20	UV B
5min			0.12KJ/m <sup>2</sup> /day	
[0055]	1	x	<sup>12</sup> C <sub>6</sub> <sup>+</sup>	UV B
				I <sub>2</sub> KI
				10.5
	1 14.5			x
<sup>12</sup> C <sub>6</sub> <sup>+</sup>	UV B	UV B		
[0056]	4			
[0057]	(1)			
		<sup>12</sup> C <sub>6</sub> <sup>+</sup>	<sup>12</sup> C <sub>6</sub> <sup>+</sup>	5 1
	C	40MeV/u		
		250nGy	20nGy/min	
[0058]	(2)		3:1	
	30cm 45cm			

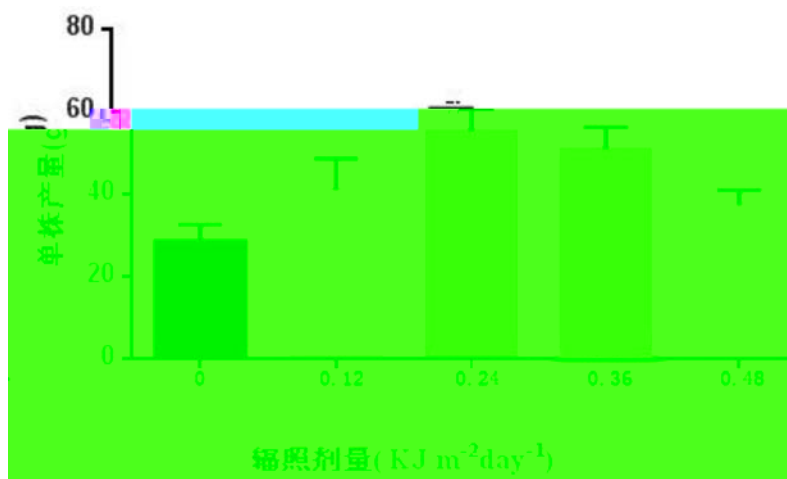
[0059]	(3)					20W12RS, 280-320nm	UV B
			50cm UV B			20.5 $\mu$ W/cm <sup>2</sup>	11 00
		5min	30min	x		x	
2.0GeV		30 40mA,	0.5 2.5KeV			10 <sup>11</sup> /s	UV B
		20s	60min			UV B	
							2
	20		UV B		5min		
0.12KJ/m <sup>2</sup> /day							
[0060]							I <sub>2</sub> KI
					1		13.9
	1					1 15	
[0061]						1	
[0062]			I <sub>2</sub> KI				
	2			<sup>12</sup> C <sup>6+</sup>	<sup>12</sup> C <sup>6+</sup>		5 1
		C		40MeV/u			
				250mGy		20mGy/min	
	1						I <sub>2</sub> KI
					1		
	2						
[0063]		3	x	x			2.0GeV
		30 40mA,	0.5 2.5KeV		10 <sup>11</sup> /s	20s	60min
							I <sub>2</sub>
KI					1		
	0.8				1		x
				x			
[0064]							



1



2



3