

【本件リリース先】

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**NEWS RELEASE**

4 2 4

本件の報道解禁につきましては、  
令和4年2月7日(月)23時以降に  
お願いいたします。

LED

LED

LED

LED

20

SiO<sub>2</sub>

LED

21

LED

LED

LED

LED

LED

SDGs

Orange-Red Si Quantum Dot LEDs from Recycled Rice Husks

Shiho Terada<sup>1</sup>, Honoka Ueda<sup>2</sup>, Taisei Ono<sup>1</sup>, Ken-ichi Saitow<sup>1-3,\*</sup>

1.

2.

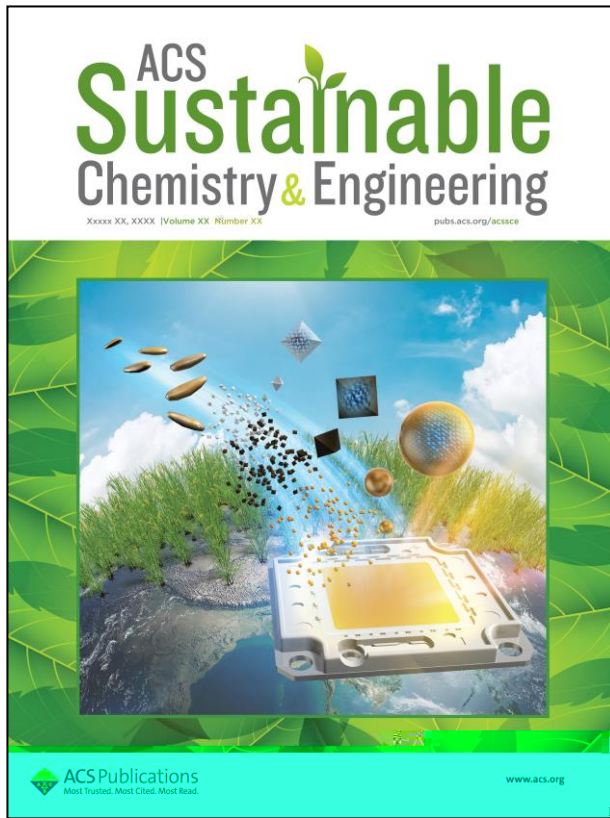
3.

\*

2022 2 7

ACS Sustainable Chemistry & Engineering (IF=8.198)

<https://doi.org/10.1021/acssuschemeng.1c04985>



$\text{SiO}_2$  20 1  
 2013  $\text{SiO}_2$  5 10 1  
 5 LED 10  
 0.01 TV 1  
 $\text{SiQD}$  2012  $\text{SiQD}$  LED 2015  $\text{SiQD}$  2009  
 2020 2022 1  $\text{SiQD}$  LED 1/380 80  $\text{SiQD}$   
 $\text{SiQD}$  LED 21  $\text{SiQD}$   $\text{SiQD}$  LED

LED

SiO<sub>2</sub>

1

100

86

2

1-2

3

21

LED

4

LED

3

LED

LED

2cm

4mm<sup>2</sup>

LED

EL

LED

LED

40

LED

LED

SDGs17

12

15

1)

5

2)

3)

EL

3-4

4)

LED

LED

2026

86

LED

SDGs

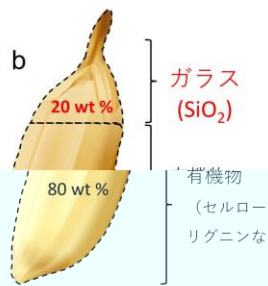
8

9

a



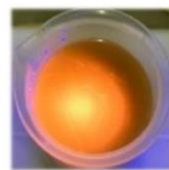
b



水素修飾のSiQD

デシル基修飾のSiQD

a



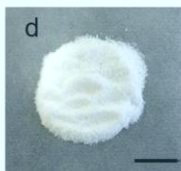
b



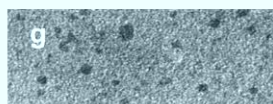
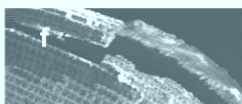
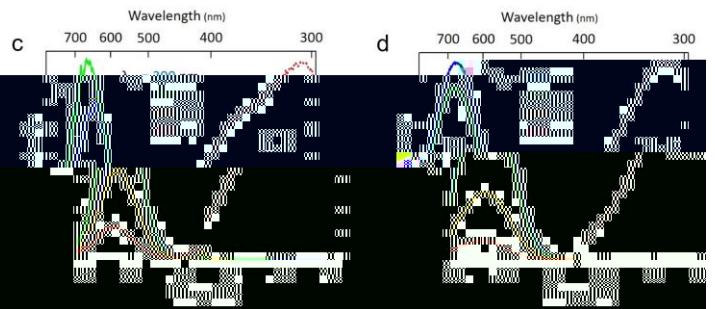
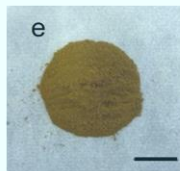
c



d



e



2

(a)

1-2

(b)

21

(c)

1

(a)

(c)

(d)

(b)

(a)

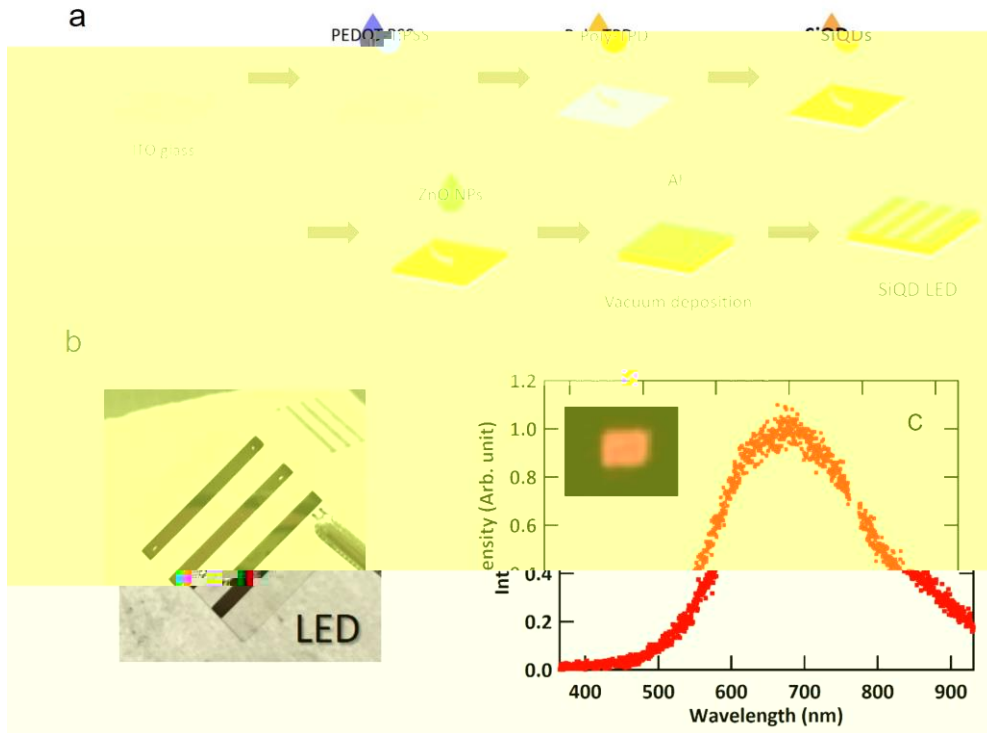
(d)

(b)

(e)

(f)

(g)



3 (a) LED LED LED (b) LED (c)  
 LED LED LED  
 $2 \times 2 \text{ cm}^2$   $4 \text{ mm}^2$

1

80

80

3

4

LED

$\text{C}_{10}\text{H}_{21}$

1000

100

5

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