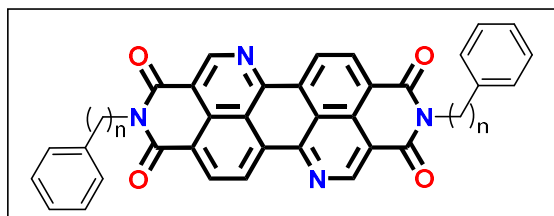
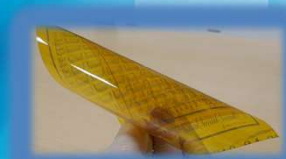


semi-
conductor

n-type organic semiconductors PhC3-BQQDI



n=2 PhC2-BQQDI
n=3 PhC3-BQQDI

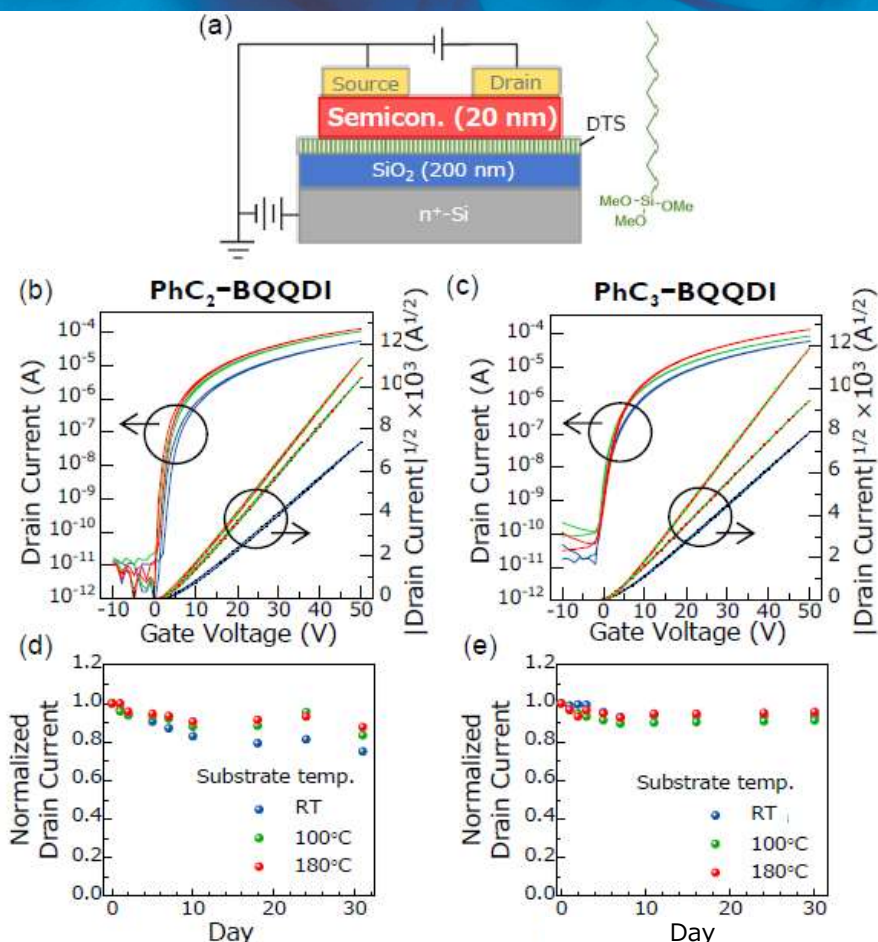


benzo[de]isoquinolino[1,8-gh]quinoline diimide (BQQDI)

Features

- ◇ **High electron mobility** $>0.6 \text{ cm}^2/\text{Vs}$ (vacuum-deposited thin-film transistors)
- ◇ **High stability** Decreasing rate of electron mobility is less than 10% after one month. (vacuum-deposited OFET)

Vacuum-deposited thin-film transistors



(a) TFT structure. (b)(c) Transfer characteristic ($V_D = 50 \text{ V}$).
(d)(e) shelf-life stability test on polycrystalline TFTs in ambient air.

Vacuum-Deposited Polycrystalline Transistors

compound	temperature	average (max) mobility (cm ² V ⁻¹ s ⁻¹) [†]	threshold voltage V _{th} (V) [†]	contact resistance (kΩ cm) [‡]
PhC ₂ -BQQDI	rt	0.29 (0.30)	4.6	4.8±0.6
	100°C	0.54 (0.54)	3.3	5.8±0.5
	180°C	0.64 (0.65)	3.5	4.7±0.4
PhC ₃ -BQQDI	rt	0.32 (0.33)	3.2	1.7±0.3
	100°C	0.51 (0.53)	1.4	4.3±0.6
	180°C	0.65 (0.70)	2.5	3.2±0.5

[†] drain voltage, V_D = 50 V; saturation regime.

[‡] estimated by transfer line method; Au electrodes.

<References>

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- Kumagai, S., *et al.*: *Chem. Mater.*, **32**, 9115 (2020).
- Kumagai, S., *et al.*: *Adv. Mater.*, **32**, 2003245 (2020).

<n-type organic semiconductors>

Code No.	Product Name	Package Size	Price
166-28871	PhC3-BQQDI [vacuum-deposited thin-film]	100mg	913.00 USD
165-28601	PhC2-BQQDI [solution-crystallized thin-film] [vacuum-deposited thin-film]	100mg	800.00 USD

<p-type organic semiconductors>

Code No.	Product Name	Package Size	Price
208-20821	TBBT-C ₄	100mg	825.00 USD
205-20831	TBBT-C ₁₀	100mg	825.00 USD

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FUJIFILM Wako Pure Chemical Corporation
1-2, Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan
Tel: +81 6 6203 3741 Fax: +81 6 6203 1999
ffwk-cserservice@fujifilm.com

FUJIFILM Wako Chemicals U.S.A. Corporation
1600 Bellwood Road, Richmond, VA 23237, U.S.A.
Toll-Free (U.S. only): +1 877 714 1920
Tel: +1 804 271 7677 Fax: +1 804 271 7791
wkuslabchem@fujifilm.com

FUJIFILM Wako Chemicals (Hong Kong) Limited
Room 1111, 11/F, International Trade Centre, 11-19 Sha Tsui Road,
Tsuen Wan, N.T., Hong Kong
Tel: +852-2799-9019 Fax: +852-2799-9808
wkhk.info@fujifilm.com

FUJIFILM Wako Chemicals Europe GmbH
Fuggerstr 12, 41468 Neuss, Germany
Tel: +49 2131 311 0 Fax: +49 2131 311 100
labchem_wkeu@fujifilm.com

FUJIFILM Wako (Guangzhou) Trading Corporation
Room 3003, 30/F., Dong Shan Plaza 69, Xian Lie Zhong Road,
Guangzhou, 510095, China
Tel: +86-20-8732-6381 (Guangzhou) Tel: +86-21-6288-4751 (Shanghai)
Tel: +86-10-6413-6388 (Beijing)
wkgz.info@fujifilm.com