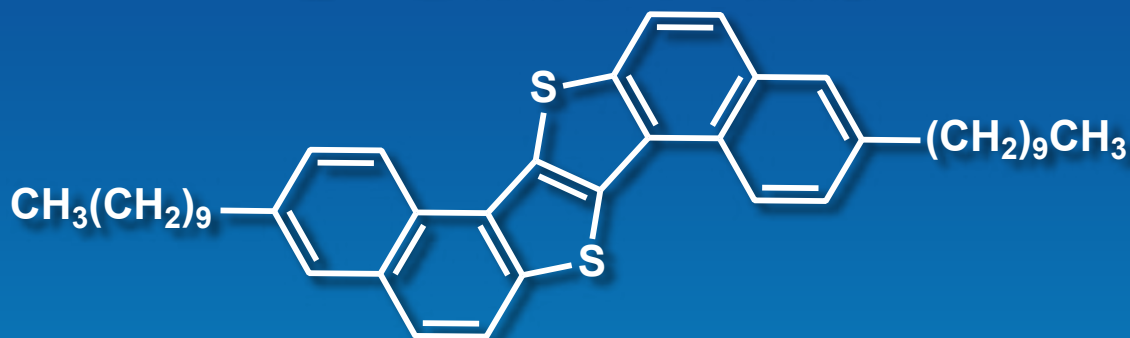


High Performance S-shaped Organic Semiconductor S-DNTT-10



S-DNTT-10 [for organic electronics]

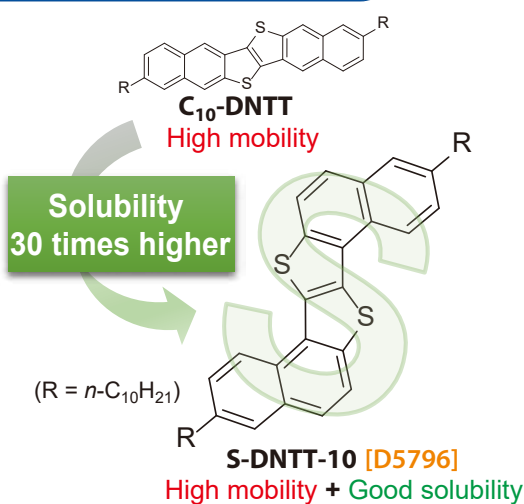
100mg / 250mg

[D5796]

Advantages

- High hole mobility >10 cm²/Vs (Dip-coating method)
- Applicable to both dry and wet processes
- High durability

Device Characteristics



Performance of Dip-Coated OFETs Based on S-DNTT-10 [D5796]

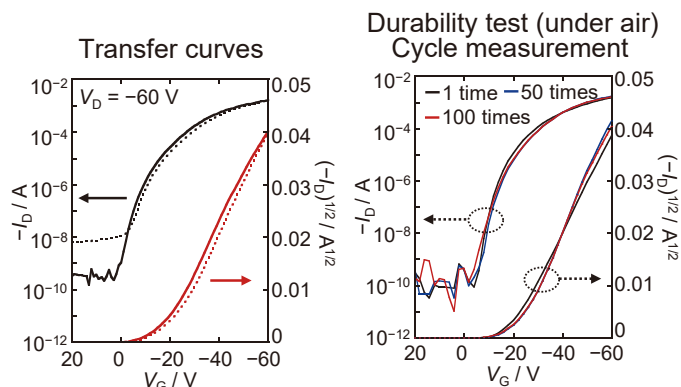
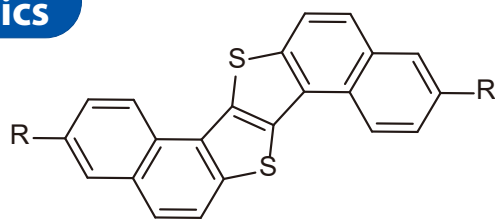


Table 1. Characteristics of OFETs based on **S-DNTT-10 [D5796]**

Fabrication method	Surface modification Si/SiO ₂ substrate	Maximum mobility (cm ² /Vs)	Threshold voltage (V)	on/off
Wet (Dip-coating)	w/o (bare)	11	-17	10 ⁷
Vacuum deposition	w/o (bare)	3.5	-8	10 ⁷

High Performance S-shaped Organic Semiconductor S-DNTT-10

Characteristics



S-DNTT-*n*¹⁾
(*n* = 4, 6, 8, 10)

R = $-(\text{CH}_2)_3\text{CH}_3$ (*n* = 4)

R = $-(\text{CH}_2)_5\text{CH}_3$ (*n* = 6)

R = $-(\text{CH}_2)_7\text{CH}_3$ (*n* = 8)

R = $-(\text{CH}_2)_9\text{CH}_3$ (*n* = 10)

Table 2. Physical property data ¹⁾

Compound	Solubility ^a (mmol/L)	HOMO (eV)	Mobility (cm ² /Vs)	
			Vacuum deposition ^b	Wet process
S-DNTT-4	19.4	-5.3	0.16	3.5 ^c
S-DNTT-6	9.7	-5.3	1.6 × 10 ⁻³	6.8 ^c
S-DNTT-8	8.0	-5.3	2.7	5.7 ^c
S-DNTT-10 [D5796]	3.7	-5.3	3.5	11 ^c
C₁₀-DNTT²⁾	~0.12 ²⁾	-4.9 ³⁾	3.7 ²⁾	11 ⁴⁾

^aData obtained in toluene at 60 °C. ^bData obtained using Si/SiO₂ (bare) substrates. ^cDip-coating method.

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S-DNTT-10 has a product specification for the hole mobility of >3.0 cm²/Vs (vacuum deposition method, bare substrate) on OFET devices.

Related Products

High-performance p-type organic semiconductor

Ph-BTBT-10 [for organic electronics]

100mg / 250mg / 1g [D5491]

High-performance n-type organic semiconductor

TU-1 [for organic electronics]

100mg / 250mg [T3922]

TU-3 [for organic electronics]

100mg / 250mg [T3924]

Organic Transistor Webpage



TCI has released a new page for organic transistors which includes product details, device fabrication and evaluation data, and its physical properties (e.g. UV-Vis spectra and 2D-GIXD data).

<https://bit.ly/33zmkIX> or



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