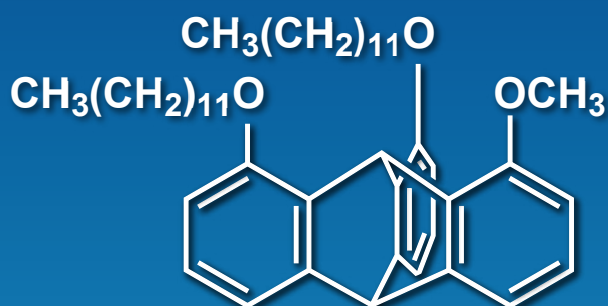


New

Triptycene-type Surface Treatment Agent for Completely Orientated Molecular Film



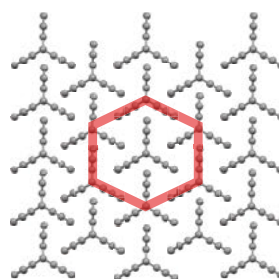
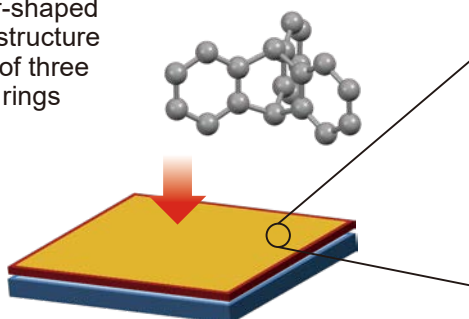
Trip-C12'
100mg
[D5881]

Advantages

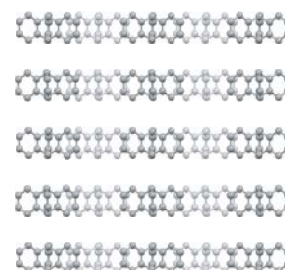
- Forms completely oriented molecular thin films on any substrate layer
- Applicable to dry and wet processes
- Enables the improvement of OFET performance by inserting its film under an active layer

Self-assembly of Triptycene on a substrate^{1~4)}

A propeller-shaped molecular structure consisting of three phenylene rings



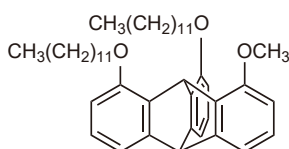
Top view



Side view

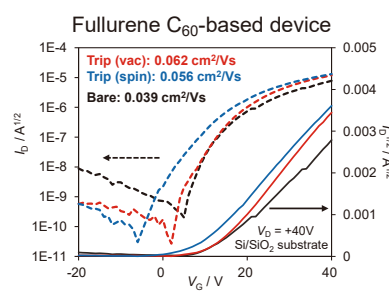
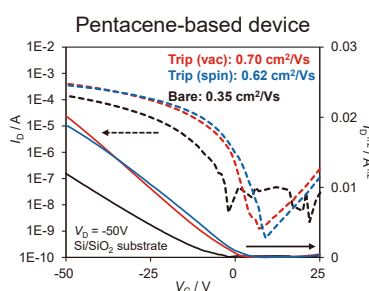
Forming of a 2D nested hexagonal packing sheet and 1D layer stacking structure

Surface Modification using Trip-C12' for the Improvement of OFET Performance



Trip-C12' [D5881]

deposited by vacuum-evaporation or spin-coating on Si/SiO₂ substrate.



The OFET mobilities increased by inserting the Trip-C12' layers

Triptycene-type Surface Treatment Agent for Completely Orientated Molecular Film

Film deposition procedure of Trip-C12'

| Deposition method | Vacuum-evaporation ²⁾ | Blade-coating ³⁾ | Spin-coating ¹⁾ |
|----------------------|---|--|---|
| Substrate, Insulator | SiO ₂ , AlO _x , Polyimide, Parylene | Parylene | Silicon wafer |
| Deposition condition | Thickness: 5nm Without substrate heating during deposition | 0.5mM Mesitylene solution Blade speed: 40~50 μm/sec Substrate temperature: 50~60°C | 5mM Toluene solution Rotation speed: 2000RPM |
| Annealing | 120°C, 1 hour, N ₂ | 120°C, 1 hour, vacuum (~100Pa) | 120°C, 1 hour |

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DOI: <https://doi.org/10.1021/acsami.9b13056>

Related Products

Trip-C12' precursor

1,8,13-Trihydroxytriptycene

500mg [D5823]

High-quality organic semiconductors

Pentacene

100mg / 1g [P2524]

Fullerene C₆₀

100mg [F1232]

Ph-BTBT-10

100mg / 250mg / 1g [D5491]

S-DNTT-10

100mg / 250mg [D5796]

TU-1 [for organic electronics]

100mg / 250mg [T3922]

TU-3 [for organic electronics]

100mg / 250mg [T3924]

Surface treatment agent

Trichlorooctadecylsilane (>99.0%)

1g [T3815]

Organic Transistor Webpage



TCl 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/3dSpPZC> or



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