

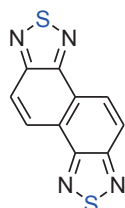
## Organic semiconductor materials of Sankyo Kasei

# NTz, NOz

A variety of naphthobisc chalcogenadiazole (NTz, NOz) derivatives with a rigid tetracyclic structure are available, and polymer materials incorporating NTz and NOz have been reported to exhibit excellent semiconductor properties<sup>1-2</sup>). In addition to NTz and NOz, various nitrogen-containing heterocyclic compounds can be synthesized from 1,2,5,6-tetraaminonaphthalene (TAN), which is a precursor for NTz synthesis. This material has high potential as a building block for constructing optical and electronic devices.

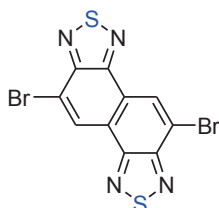
This material has high potential as a building block for constructing optical and electronic devices.

1) Kawashima, K. et al, *J. Am. Chem. Soc.* **2016**, 138(32), 10265.  
2) Kawashima, K. et al, *Nat. Commun.* **2015**, 6, 10085.



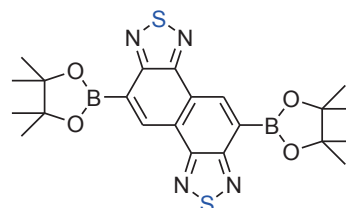
**NTz**

CAS No. 133546-47-1



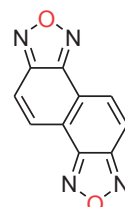
**BR2-NTz**

CAS No. 133546-50-6



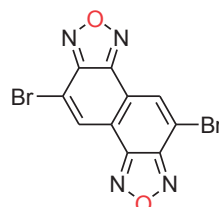
**PB2-NTz**

CAS No. 1467776-41-5



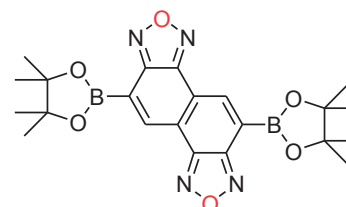
**NOz**

CAS No. 1394221-73-8



**BR2-NOz**

CAS No. 1437229-13-8

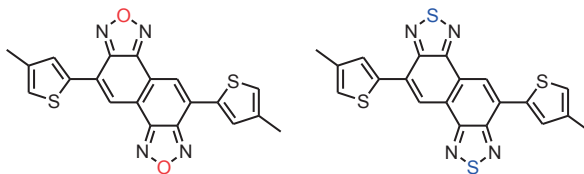
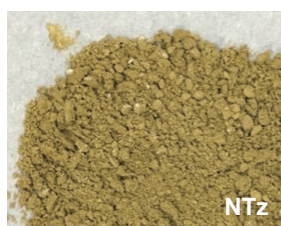
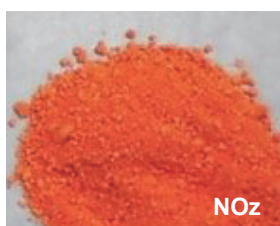


**PB2-NOz**

CAS No. 18422-53-2

### Features and characteristics

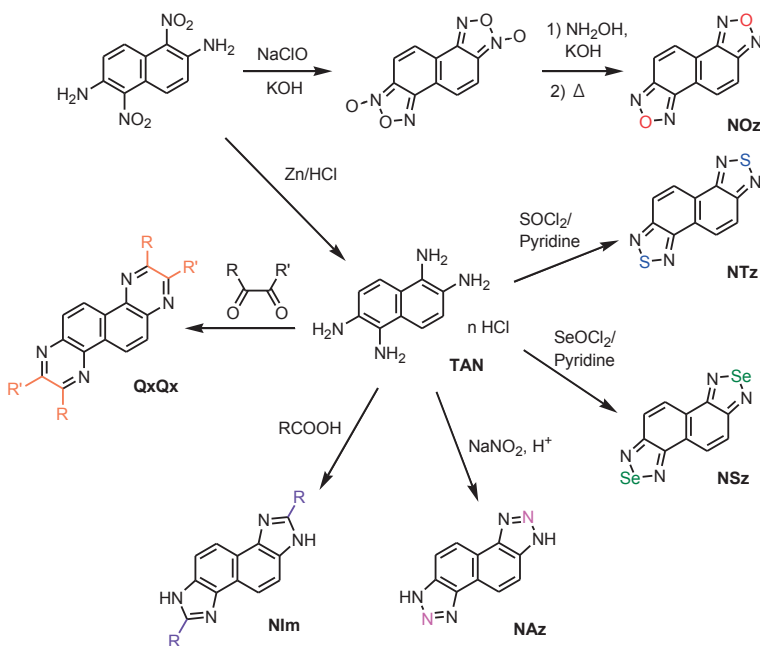
- [Features]**
- Strong electron acceptability, rigidity
  - Low HOMO-LUMO energy levels
  - Narrow HOMO-LUMO band gap



TD-DFT B3LYP/6 31G(d)level.

Kawashima, K. et al, *Chem. Mater.* **2015**, 27, 6558.

### Relevant building blocks



3) Kawashima, K. et al, WO2014002969 A1.

4) Kawashima, K. et al, *Chem. Mater.* **2015**, 27, 6558.