Isostructural Organic Junctions

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Isostructural Organic Junctions

Semiconducting and metallic isostructural heterojunctions between organic materials possessing homomorphic crystal structures are useful in certain applications. A specific example that has been prepared is the junction formed between the charge transfer salts (TTF) (TCNQ) and (TSeF) (TCNQ) where

Other examples of organic junction materials are (1) the oxygen analogs of TTF and TSeF and (2) the TTF halides and TSeF halides which will form charge transfer salts with TCNQ.

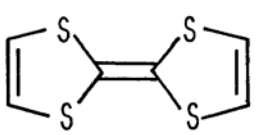
The hexamethylene analogs of (TTF) (TCNQ) and (TSeF) (TCNQ) may also be used.

Other examples would include charge transfer salts such as hexamethylene analogs of (TTF) (TCNQ) and (TSeF) (TCNQ).

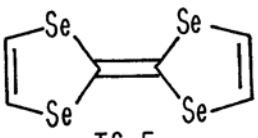
The electrical properties of these junctions may be varied by the use of dopants. For example, (TTF) (TCNQ) or (TSeF) (TCNQ) may be doped with the acceptor methyl (TCNQ). A variety of dopants may be used.

Other charge transfer salts may include the acceptor (TNAP) or substituted (TCNQ) derivatives, such as DMTCNQ, where

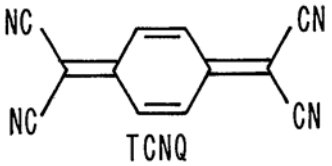
Other donor molecules such as TTT and TSeT, may be used in place of TTF and TSeF, where



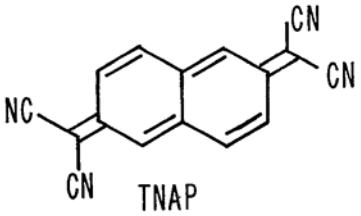
TTF



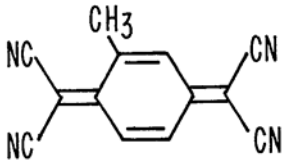
TSeF



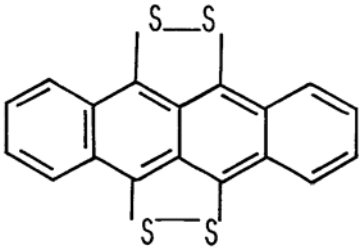
TCNQ



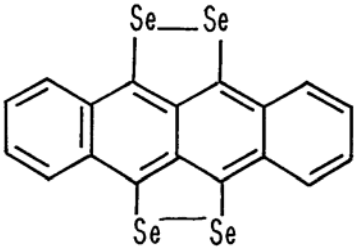
TNAP



DMTCNQ



TTT



TSeT