New Molecular Conductors based on [Ni(dmid)$_2$] with TMTTF, TTF and ET as Cations

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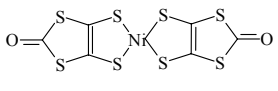
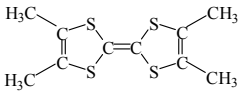
New molecular conductors based on rare π-electron acceptor [Ni(dmid)$_2$] with TMTTF, TTF and ET as cations were synthesized. Investigation of conducting properties revealed that they all are semiconductors. X-ray study of TMTTF[Ni(dmid)$_2$] was carried out.



[Ni(dmid) $_2$]



TMTTF

A lot of compounds have been obtained containing [Ni(dmit)$_2$]$^{n-}$ anion analogous to [Ni(dmid)$_2$]$^-$ anion, where O atom is substituted with S one. Among them are salts with organic π-donors ET, TTF, EDT etc. Some of those salts happened to be superconductors [1-2].

The new semiconducting TMTTF[Ni(dmid)$_2$] salt has a layered structure where cations and anions form mixed regular stacks.

[1] Cassoux P., Valade L., Kobayashi H., Kobayashi A., Clark R., Underhill A., *Coord. Chem. Rev*., 1991, **110**, 115. [2] Tajima H., Inokuchi M., Kobayashi A., Ohta T., Kato R., Kobayashi H., Kuroda H., *Chem.Lett*., 1993, 1235.

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