Structure and Properties of dmit Systems

	構造	伝導度	その他
$Ni(dmit)_2$	$P2_1/a$ (#43)		
$TTF[Ni(dmit)_2]_2$	C2/c (#30) バンド構造 （#34 および R1）	σ_{rt} =300 (#30) T_c=1.6K (7kbar) (R3,#33 等) 常圧下では金属	χ (#4), NMR(#28) 温度－圧力相図(#33) 物性一般（R3 の文献を見よ）
α-EDT-TTF$[Ni(dmit)_2]$	P1-(#7, #22) 交差型	σ_{rt} =100(//ab) (#7) σ_{rt} =140~370(//ab); σ_{rt} =14~36(//c*) (#14) T_{M-M}=14 K(#7) T_{SC}=1.3K(#8)	Magnetoresistance(#9) H_{c2} (#10) Opt. (#11) Meissner (#12） χ (#13) ESR (#22)
β-EDT-TTF$[Ni(dmit)_2]$	mixed stack $P2_1/c$ (#7)	σ_{rt} =0.01; semicon.	
γ-EDT-TTF$[Ni(dmit)_2]$	1D (#22)	σ_{rt} =100; T_{M-I}=100 K	
TMTSF$[Ni(dmit)_2]$	1D (TMTSF) (#19)	σ_{rt} =300 ;semicon. Ea=0.034eV (#19)	
α-(BPDT-TTF) $[Ni(dmit)_2]_2$	1D (#20)	σ_{rt} =5~10; E_a= 0.012eV (r.t.~120K) ; T_{S-S}=120 K (#20)	
(DBTTF)$[Ni(dmit)_2]$	2-chain (#23)	σ_{rt} =100	
(ET)$[Ni(dmit)_2]$	mixed stack (#24)	σ_{rt} =10^{-3} ;E_a=0.28eV	
OMTSF$[Ni(dmit)_2]$ (#50)	mixed stack (#50)	σ_{rt} =10(#50)	Opt(#50)
$[Pt(dddt)_2[Ni(dmit)_2]$	monoclinic (#53)	insulator	
$(NH_2Me_2)[Ni(dmit)_2]_2$	P1-(#6,#48)	σ_{rt} =0.08(//ab) (#6) semicon. E_a=0.2eV	
$(NHMe_3)[Ni(dmit)_2]_2$	P1-(#48)	σ_{rt} =140; semicon.	
$(NHMe_3)_2[Ni(dmit)_2]_5$. $2CH_3CN$	P1-(#48)	σ_{rt} =0.2(//ab) (#6) semicon. E_a=0.2eV	
$(NH_3Me)_2[Ni(dmit)_2]_5$. $2CH_3CN$	P1-(#48)	σ_{rt} =1.5(//ab) (#6) semicon. E_a=0.2eV	
α-$Et_2Me_2N[Ni(dmit)_2]_2$	C2/c(R.T.;#16) $P2_1/c$(17K:#27) 2DFS(#27)	σ_{rt} =20~100(//bc) (#16); σ_{rt} =2.5(//a*) (#17) T_{M-M}=245 K (#17)	SdH (#17,#18) AMRO (#17) χ (#54)

γ-$Et_2Me_2N[Ni(dmit)_2]_2$	Pnma (RT); $P2_12_12_1$(4.3K) ; (#54)	metallic metal-metal transition をしめさない(#54)	χ (#54)
$(C_7H_{16}N)[Ni(dmit)_2]_2$	C2/c (300K) Cc(20K) (#51)	metallic down to 0.5K (#51) $T_{M\text{-}M}$=225K	χ (#54)
$(Et_4N)_{0.5}[Ni(dmit)_2]$	(#25)	σ_{rt}(//b) =4.5×10^{-2}; semicon. (#25)	
$(CH_3)_4N[Ni(dmit)_2]_2$	C2/c (#39) X-ray 温度依存性 (#39) FS (#39a,c, #32)	σ_{rt} =50(#32); $T_{M\text{-}I}$ =40K, $T_{I\text{-}I}$=20 K(#41); Tsc=5K(7kbar;#39)	χ (#41), S(#41), Opt.(#42a)
$[Bu_4N]_2[Ni(dmit)_2]_7$. $2CH_3CN$	P1- (#43)	σ_{rt} =1-10; semicon.; E_a=0.1~0.02eV (#43)	Opt.(#52)
$(Ph_4As)_{0.25}[Ni(dmit)_2]$	P2/n(#45)	σ_{rt} =10-15; semicon.; E_a=0.03~0.01eV (#45)	
$Ph_4P[Ni(dmit)_2]_3$	C2/c (#52)	σ_{rt} =10;Ea~46meV semicon. (#36) σ_{rt} =7; semicon; E_a = 0.01eV (#52)	χ, opt, S (#36) Opt.(#52)
$Me(Ph)_3P[Ni(dmit)_2]_3$	$P2_1/c$ (#56)	0.07~0.1; E_a=0.22eV (#56)	
$(Me_3S)[Ni(dmit)_2]_2$	P1- (#52)	σ_{rt} =6.5×10^{-2}; semicon.; E_a=0.13eV (#52)	Opt.(#52)
$AcrH[Ni(dmit)_2]_3$	C2/c (#75, #76)	σ_{rt} =45 metallic down to 4K	
$MEA[Ni(dmit)_2]_3$. MeCN	$P2_1/c$ (#74)		
$Hmorph_2[Ni(dmit)_2]_3$	$P2_1/n$ (#74)	σ_{rt} =0.1; semicon.; E_a=0.1eV	
$HMemorph[Ni(dmit)_2]_2$	P1- (#74)	σ_{rt} =4; semicon.; E_a=0.1eV	
[guanidinium] $[Ni(dmit)_2]_2$	P1- (#63)	σ_{rt} =32; semicon.; E_a=0.12eV (#63)	
[1,1-dimethylguani- dinium]$[Ni(dmit)_2]_2$	P1- (#63)	σ_{rt} =0.15; semicon.; E_a=0.13eV (#63)	
$[Me_3N(CH_2)_4NMe_3]$ $[Ni(dmit)_2]_5$.2dmf	P1-(#64)	σ_{rt} =1; semicon.; E_a=0.0.19eV (#64)	
$[Me_3N(CH_2)_4NMe_3]$ $[Ni(dmit)_2]_5.2CH_3CN$	P1(#64)	σ_{rt} =0.1; semicon.; E_a=0.20eV (#64)	
$[Li]_2$[12-crown-4$]_3$. $[Ni(dmit)_2]_7[acetone]_2$	P1-(#58,#59)	σ_{rt} =30; semicon.; E_a=0.1 eV(T>230K), E_a=0.17eV (T<230K) (#58,#59)	

$[NH_4]$[15-crown-5]$_2$. [Ni(dmit)$_2$]	C2/c(#58)	σ_{rt} =10^{-6}; insulator (#58)	
$[NH_4]$[18-crown-6]. [Ni(dmit)$_2$]$_3$	P1-(#58)	σ_{rt} =0.4; semicon.; E_a=0.15 (T>230K), E_a=0.07eV (T<230K) (#58)	
$Li_{0.6}$(15-crown-5-ether)[Ni(dmit)$_2$]$_2$.H_2O	$P2_1$/c (#60)	σ_{rt} =240; T_{M-I}=250 K (#60)	χ, NMR(#60)
Li[Ni(dmit)$_2$]$_2$.2CH_3CN (1); Na[Ni(dmit)$_2$]$_2$ (2); $K_{0.4}$[Ni(dmit)$_2$] (3); $Rb_{0.36}$[Ni(dmit)$_2$] (4); Cs[Ni(dmit)$_2$]$_2$ (5)		(1) σ_{rt} =0.5;semicon. (2) σ_{rt} =20;metal (3) σ_{rt} =100;metal (4) σ_{rt} =10;semicon. (R3)	
p-EYPNN[Ni(dmit)$_2$]	P1- spin-ladder(#38)	σ_{rt} =1.3×10^{-4}(#38); Semicon.	χ(#38)
C_1^+[Ni(dmit)$_2$]$^-$ (1) C_1^+[Ni(dmit)$_2$]$^-$ (2) C_2^+[Ni(dmit)$_2$]$^-$ (3) C_2^+[Ni(dmit)$_2$]$^-$ (4) C_1,C_2=Cyanine Dyes	(1),(3) $P2_1$/c (2),(4) P1- (#55)	σ_{rt}[(2)~(3)] =10^{-6}~10^{-5} (powder) σ_{rt}[(1)] =1.3×10^{-2} E_a=0.05eV (#55)	
(α,α')-TTF[Pd(dmit)2]2 （二つの相が同じ物か別かが不明 ）	C2/c (#29;R3) TTF[Ni(dmit)$_2$]$_2$と同型構造 E(*k*) (#34: α')	σ_{rt} =750 (α,α'共:R3) T_{M-I}=220K(1 bar) T_{sc}=5.9K(24kbar: α') T_{sc}=1.2K(19.25kbar: α) (#35)	χ(#4: α',αの区別なし)
β-TTF[Pd(dmit)2]2	P1-(#29)		
γ-TTF[Pd(dmit)2]2	P1-(#29)		
γ-TTF[Pd(dmit)2]2	P1-(#29)	100 T_{M-I}=100 (#29)	
α'-EDT-TTF[Pd(dmit)$_2$]	P1- (#47) Fermi 面(#47, #31)	σ_{rt} =58 T_{M-M}=40K metal (#31)	X-Ray; χ (#47)
EDT-TTF$_2$[Pd(dmit)$_2$]$_3$	P1-; E(k) (#47)	σ_{rt} =120; (#47) 温度依存性のデータなし	
γ-EDT-TTF[Pd(dmit)$_2$]	diffuse,温度依存性を含む(#22)	σ_{rt}(//:2.4kbar)~150; T_{M-M}=80K(#22); metallic down to 2K (2.4kbar) (#22)	
IEDT[Pd(dmit)$_2$]	P1-(#67)	σ_{rt} =300; metallic down to 4.2K (#67)	

$Cs[Pd(dmit)_2]_2$	C2/c (#15;#34)	σ_{rt} =100(//ab) (#15)	σ, χ ,Opt.(#15;#42)
$Et_2Me_2N[Pd(dmit)_2]_2$	P1- open FS (#57)	σ_{rt} =10~80; T_{sc} = 4K (2.4kbar) (#57)	
α-$(CH_3)_4N[Pd(dmit)_2]_2$	P1- (#26)	σ_{rt} =50; semicon.(1bar)	
β-$(CH_3)_4N[Pd(dmit)_2]_2$	C2/c(#26) ;FS (#70,#71, #72)	σ_{rt} =30; semicon.(1bar) T_{sc}=6.2K(6.5 kbar) (#70）	
β-$(CH_3)_4As[Pd(dmit)_2]_2$	C2/c (#26); FS(#71, #72)	σ_{rt} =1; semicon.; Ea = 0.07 eV; **高圧下で** 4.2K **まで金属的**(#72)	Opt. (#42)
β-$(CH_3)_4P[Pd(dmit)_2]_2$	C2/c (#37); FS (#71, #72)	σ_{rt} =20; $T_{M\text{-}I}$=60 K; σ_{rt} =1; semicon.; E_a=0.07 eV (#37); **高圧下で** 4.2K **まで金属的** (#72)	χ (#72)
β-$(CH_3)_4Sb[Pd(dmit)_2]_2$	C2/c ;FS (#71, #72)	σ_{rt} =20; semicon.; **高圧下で** 4.2K **まで金属的** (#71, #72)	
$(Et_4N)_{0.5}[Pd(dmit)_2]$	(#62,R3)	σ_{rt} =0.11; semicon.(R3)	
n-$Bu_4N_{0.5}[Pd(dmit)_2]$	P1-(#61)	σ_{rt} =12; $T_{M\text{-}I}$=240 K (#61)	
(n-$Bu_4N)_{0.33}[Pd(dmit)_2]$	P1-(#61)	σ_{rt} =150; $T_{M\text{-}I}$=120K (initial); semicon. (after heat cycle) (#61)	
β'-$Et_2Me_2P[Pd(dmit)_2]_2$	C2/c (#69)	σ_{rt} =10; semicon.; T_{sc}=4 K at 6.9 kbar (#68)	**特異な相図** χ
β'-$Et_2Me_2Sb[Pd(dmit)_2]_2$	C2/c (#69)	σ_{rt} =1; semicon.; **高圧下で金属的** (#68)	
TTF[Pt(dmit)2]3	P1-(#30)	σ_{rt} =20; E_a=0.03eV (300–200K: #30)	
$(HMTTeF)_2[Pt(dmit)_2]$	2D (#21)	σ_{rt} =5~10; semicon.;	
$CH_3N[Pt(dmit)_2]_2$	C2/c(#1) Band Structure (#1)	σ_{rt} =10(//ab) (#1) T_{MI} = 220 K	Opt. (#2)
$(NHMe_3)[Pt(dmit)_2]_3$. CH_3CN	P1-(#5,#48)	σ_{rt} =140(//ab) (#5; #6) T_{MI} = 180 K	

$Me_4N[Au(dmit)_2]_2$	B2/b(#3)	σ_{rt} =5-15(//a) (#3) Semicon.	
$Et_4N[Au(dmit)_2TCNQ]$	P1-(#49)	σ_{rt} =1×10^{-5}(#49)	opt. (#49)
$(ET)_3[V(dmit)_3]_2$	P1-(#46a) E(*k*) (#46b)	σ_{rt} =3-45; semicon. ;Ea=0.020eV T<150 K	
$[NBu_4]_2[W(dmit)_3]$	$Pca2_1$(#44)	insulator	
$[NBu_4]_2[Mo(dmit)_3]$	$Pca2_1$(#44)	insulator	
$[Fe(C_5Me_5)_2][W(dmit)_3]$	P1-(#44)	insulator	χ
α-$[Me_4N][Ni(dmise)_2]_2$	Pbnb (#65)	σ_{rt} =1; semicon.; E_a=0.08eV (#65)	
β-$[Me_4N][Ni(dmise)_2]_2$	C2/c (#65)	σ rt =10; semicon.; E_a=0.05eV (#65)	
D $[Pd(dmise)_2]_2$ (1): D=$(CH_3)_4N$; (2): D=$(CH_3)_4P$; (3): D=$(CH_3)_4As$; (4): D=$(CH_3)_4Sb$;	C2/c; E(k) (#66, #72)	σ_{rt} =200~20; T_{M-I}=150 K (#66); **圧力依存性を含めた詳細なデータ**(#72)	(2): χ (#72); NMR(#73)
$NMe_4[Pd(dsit)_2]_2$	C2/c (#37)	σ_{rt} =30-70 (#37) T_{M-I}=220K	Opt (#37)

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