ドナー、アクセプターの酸化還元電位、電荷移動吸収帯

各ドナー（D）、アクセプター（A）について、主に同一条件でのサイクリックボルタメトリ（ＣＶ）によるデータを記載する。以下は参照電極を飽和カロメル電極（ＳＣＥ）としたデータである（主に斎藤研究室で１９９８年までに測定したデータ）。同一条件でない測定値の比較は、大きな誤差を生じるので注意が必要。左側の欄にCH_3CNでの第一酸化還元電位 $E^1_{1/2}$（V）、第二酸化還元電位 $E^2_{1/2}$（V）、それらの差 ΔE（V）、中央の欄に他の条件（溶媒、参照電極）での値、最後の欄にドナー、アクセプターの強さの目安として、ドナーの場合はそのsym-トリニトロベンゼン錯体のＣＴ帯($CHCl_3$溶媒)、アクセプターの場合はそのピレン錯体のＣＴ帯($CHCl_3$溶媒)（$h\nu_{CT}$／１０^3 ｃｍ$^{-1}$）を記す。

各記号の説明

$E^1_{1/2}=1/2[E^p_{red}(A^0\rightarrow A^{-1})+E^p_{ox}(A^{-1}\rightarrow A^0)]$, $E^2_{1/2}=1/2[E^p_{red}(A^{-1}\rightarrow A^{-2})+E^p_{ox}(A^{-2}\rightarrow A^{-1})]$ アクセプター（A），
$E^1_{1/2}=1/2[E^p_{ox}(D^0\rightarrow D^{+1})+E^p_{red}(D^{+1}\rightarrow D^0)]$, $E^2_{1/2}=1/2[E^p_{ox}(D^{+1}\rightarrow D^{+2})+E^p_{red}(D^{+2}\rightarrow D^{+1})]$ ドナー（D），
E^p_{red}、E^p_{ox}は酸化波、還元波のピーク電位、$\Delta E=(E^1_{1/2}-E^2_{1/2})$, 信頼性は小数点以下２桁 *:$(E^p_{ox}-E^p_{red})>100$mV,
{ }:scan speed mV/s 主に10, 100mV/s, [ ]:温度 ℃, 支持電解質0.1M TBA·BF_4, 作用電極 Pt,
溶媒:CH_3CN(AN), CH_2ClCH_2Cl(DCE), ベンゾニトリル(BN)、参照電極 Ag:Ag/AgCl

1. Electron Donor

electron donor	in CH_3CN $E^1_{1/2}$	$E^2_{1/2}$	ΔE	in CH_2ClCH_2Cl(DCE) or other $E^1_{1/2}$	$E^2_{1/2}$	ΔE		$h\nu_{CT}$
TTF system								
TTF	0.350{100} 0.353{20} 0.373{10} 0.377{100}	0.720[15] 0.730[15] 0.756[19] 0.758[19]	0.370 0.377 0.383 0.381	0.414{100} 0.281{100}	0.736[20] 0.661[19]	0.322 0.381	DCE, SCE AN, Ag	15.3$_8$
TMTTF	0.285{100} 0.279{100} 0.294{50}	0.652[22] 0.648 0.635[22]	0.367 0.369 0.341	0.383{100} 0.090{100}	0.863[16] 0.460[ ]	0.480 0.370	DCE, SCE AN, Ag	13.9$_0$
OMTTF	0.292{20} 0.292{100}	0.676[22] 0.685[22]	0.384 0.393	0.390{100}	0.875[20]	0.485	DCE, SCE	13.8$_0$
HMTTF	0.292{10}	0.634[22]	0.342	0.423{100} 0.235{10}	0.870[20] 0.570[22]	0.447 0.335	DCE, SCE AN, Ag	13.7$_0$
DBTTF	0.625{100}	0.950[15]	0.325	0.744{100} 0.541{100}	1.160[16] 0.867[16]	0.416 0.326	DCE, SCE AN, Ag	17.3$_0$
TTF$(CO_2Me)_4$				0.970{100}	1.268[24]	0.297	DCE, SCE	
BEDO-TTF	0.430{100} 0.431{10} 0.425{100}	0.690[19] 0.689[19] 0.683	0.260 0.258 0.258	0.765{10} ? 0.776{100}? 0.344{10}	0.461[19]? 0.434[19]? 0.604[19]	0.304 0.342 0.260	DCE, SCE DCE, SCE AN, Ag	14.9$_7$
BEDO-DBTTF	0.505{10}	0.800[22]	0.295	0.446{10}	0.730[22]	0.284	AN, Ag	15.8$_0$
TTC_1-TTF	0.520{100}	0.752[21]	0.232	0.640{100}	0.930[20]	0.290	DCE, SCE	16.1$_0$
$TSeC_1$-TTF	0.473{100}	0.745[21]	0.272	0.583{100}	0.914	0.331	DCE, SCE	15.8$_0$
$TTeC_1$-TTF	不可			0.519{100}	0.900[17]	0.381	DCE, SCE	15.0
C_1TET-TTF								16.0
C_7TET-TTF	0.535{100}	0.783[22]	0.248	0.635{200}	0.975[24]	0.340	DCE, SCE	16.1
EOET-TTF	0.465{10}	0.734[22]	0.269	0.389{10}	0.655[22]	0.266	AN, Ag	15.5$_0$
BEDT-TTF	0.530{10} 0.532{100} 0.520{100} 0.535{100}	0.775[19] 0.776[19] 0.765 0.776[23]	0.245 0.244 0.235 0.241	0.635{100} 0.615{100} 0.448{10}	0.970[16] 0.915[23] 0.698[18]	0.335 0.300 0.250	DCE, SCE BN, SCE AN, Ag	16.0$_5$
BMDT-TTF				?0.640{100}	[16]		DCE, SCE	

BPDT-TTF				0.650{100}	0.986[20]	0.336	DCE, SCE	
BVDT-TTF								
EDT-TTF	0.440{10} 0.437{100}	0.745[22] 0.746[22]	0.305 0.309					15.7$_0$
EDO-TTF	0.385{10}	0.706[22]	0.321	0.311{10}	0.623[22]	0.312	AN, Ag	15.2$_3$
TH-TTF	0.295{20}	0.635[ ]	0.340	0.107{100}	0.455[ ]	0.348		
BHEDT-TTF	0.415{100} 0.411{20}	0.714[ ] 0.708[ ]	0.299 0.297	0.226{100}	0.529[ ]	0.310	AN, Ag	
BHMDT-TTF	0.405{100}	0.675[ ]	0.270	0.220{100}	0.490[ ]	0.270	AN, Ag	
BHEDO-TTF	0.361{10}	0.666[20]	0.308	0.292{10}	0.600[20]	0.308	AN, Ag	14.8$_8$
BHPDT-TTF	0.416{100}	0.743[ ]	0.327	0.233{100}	0.558[ ]	0.325		
BHVDT-TTF	0.482{100}	0.770[ ]	0.288	0.290{50}	0.575[ ]	0.285	AN, Ag	
MHEDO-TTF	0.377{10}	0.693[22]	0.316	0.315{10}	0.628[22]	0.313	AN, Ag	14.9$_3$

TSF Derivatives

TSF	0.509{100}	0.803[26]	0.294					16.8
TMTSF	0.450{10} 0.445{100}	0.730[23] 0.732[23]	0.280 0.287	0.573{100} 0.388{10}	0.964[20] 0.680[23]	0.391 0.292	DCE, SCE AN, Ag	15.0$_6$
HMTSF				0.582{100}	0.955[20]	0.373	DCE, SCE	15.3
TSF(CO_2Me)$_4$				1.087{100}	1.274[16]	0.187	DCE, SCE	

TTeF Derivatives

HMTTeF				0.573{100}	0.865[20]	0.289	DCE, SCE	15.8$_0$

Azine System($E^1_{1/2}$のみ CH_3CN, SCE)

phenothiazine	0.639{10}	[17]	19.0
N-methyl-phenothiazine	0.717{10}	[25]	19.6
benzo[c]-phenothiazine	0.549{10}	[17]	17.9
dibenzo[c,h] phenothiazine	0.494{10}	[16]	17.4
dibenzo[c,h] phenoselenazine			17.2
N,N-dimethyl-phenanazine	0.191{20}	[16]	14.2

Aromatic Amine System(CH_3CN, SCE)

p-phenylene-diamine	0.280{ }	[ ]		20.3
TMPD: N,N,N',N'-	0.147{100}	0.724[16]	0.577	15.7

tetramethyl-p-phenylenediamine	0.151{10}			
diaminodurene	0.172{100} 0.173{10}	0.678[16]	0.506	17.1

benzidine				20.2
o-dianisidine	0.47{ }	0.65[ ]	0.18	19.3
o-tolidine	0.49{ }	0.71[ ]	0.22	19.2
dichloro-o-tolidine				21.3
dibromo-o-tolidine				20.4
3,5-TMB:3,3',5,5'-tetramethyl benzidine	0.480{100} 0.485{10}	0.689[16]	0.209	18.0
N,N,N',N'-TMB	0.461{100} 0.474{10}	0.633[16]	0.172	17.0
1,6-DAP	0.27{10}	0.56[23]	0.29	16.1

TDAP	0.021(2e){10} 0.018(2e){100}	0.088(2e)[20] 0.083[20]	-0.055(2e){100}	0.007(2e)[21]	AN,Ag	13.2

1,4-diamino-anthraquinone	0.750{100} 0.749{100} 0.748{100} 後の２つは	[20] 1.189[20] 1.181[20] 微分ﾊﾟﾙｽ法	CV 0.44 0.433	

Polycyclic Condensed Aromatic Hydrocarbon and Related System

HMB:hexamethy benzene	1.820{100}:peak			
triphenylene				27.5
naphthalene				27.4
phenanthrene				27.0
chrysene				24.0
pyrene	1.570{200}:peak			22.2
anthracene		1.580{100}[23] peak	BN,SCE	22.1
perylene	1.070{100}:peak 1.535:peak[18] 1.050{100}:peak 1.038{100} 1.078{100}	1.145{100}[23]	BN,SCE	20.8
naphthacene (tetracene)	1.025{500}:peak	1.10{100} 1.155{100}:peak	DCE,SCE DCE,SCE	19.2
decacyclene				

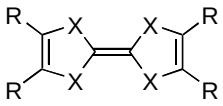
HMTP	0.474{10}[23]					21.0
DTPY	0.396{100} 0.394{20}	0.795[ ] 0.793[ ]	0.399 0.399			15.0

ferrocene

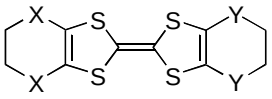
フェロセン	0.383{100} 0.427{50} [26]			0.574{100}[26] 0.577{50}[26] 0.574{10}[26]	DCE, SCE DCE, SCE DCE, SCE	16.0 (sh)
デカメチルフェロセン	-0.89{10}	-0.09[23]	0.80			13.8

dddt system

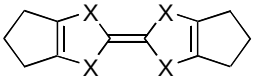
Pt(dddt)2		1.035{200}[23] 1.050{100}[23]	BN, SCE BN, SCE
Ni(dddt)2		1.005{100}peak 1.105[23]	BN, SCE



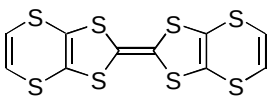
TTF : X=S, R=H
TMTTF : X=S, R=Me
TTF(CO$_2$Me)$_4$: X=S, R=CO$_2$Me
TTC$_1$-TTF : X=S, R=SMe
TH-TTF : X=S, R=CH$_2$OH
TSeC$_1$-TTF : X=S, R=SeMe
TTeC$_1$-TTF : X=S, R=TeMe
TSF : X=Se, R=H
TMTSF : X=Se, R=Me
TSF(CO$_2$Me)$_4$: X=Se, R=CO$_2$Me



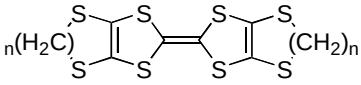
OMTTF : X=Y=CH$_2$
BEDO-TTF : X=Y=O
EOET-TTF : X=O, Y=S
BEDT-TTF : X=Y=S



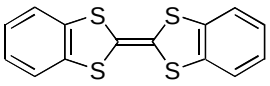
HMTTF : X=S
HMTSF : X=Se
HMTTeF: X=Te



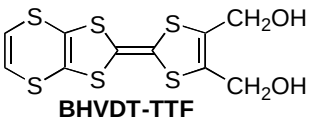
BVDT-TTF



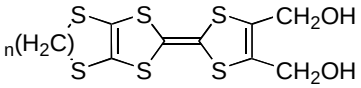
BMDT-TTF : n=1
BEDT-TTF : n=2
BPDT-TTF : n=3



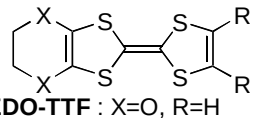
DBTTF



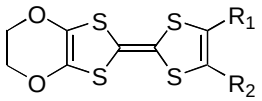
BHVDT-TTF



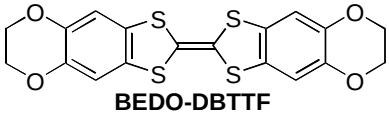
BHMDT-TTF : n=1
BHEDT-TTF : n=2
BHPDT-TTF : n=3



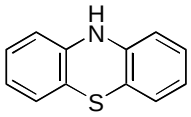
EDO-TTF : X=O, R=H
BHEDO-TTF : X=O, R=CH$_2$OH
EDT-TTF : X=S, R=H
C$_1$TET-TTF : X=S, R=SMe
C$_7$TET-TTF : X=S, R=SC$_7$H$_{15}$
BHEDT-TTF : X=S, R=CH$_2$OH



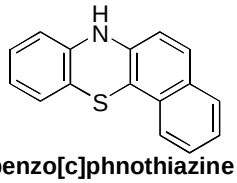
BHEDO-TTF : R$_1$=R$_2$=CH$_2$OH
MHEDO-TTF : R$_1$=H, R$_2$=CH$_2$OH



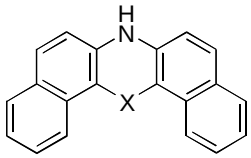
BEDO-DBTTF



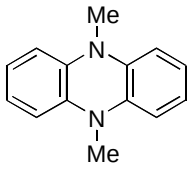
phenothiazine



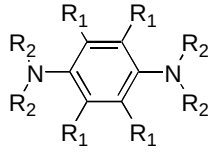
benzo[c]phnothiazine



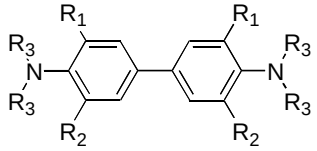
dibenzo[c,h]phenothiazine : X=S
dibenzo[c,h]phenoselenazine : X=Se



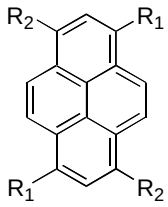
N,N-dimethylphenazine



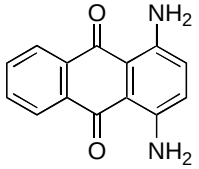
***p*-phenylenediamine** : R$_1$=R$_2$=H
TMPD : R$_1$=H, R$_2$=Me
diaminodurene : R$_1$=Me, R$_2$=H



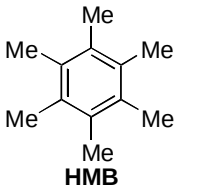
benzidine : R$_1$=R$_2$=R$_3$=H
N,N,N',N'-TMB : R$_1$=R$_2$=H, R$_3$=Me
***o*-tolidine** : R$_1$=Me, R$_2$=R$_3$=H
Cl$_2$-*o*-tolidine : R$_1$=Me, R$_2$=Cl, R$_3$=H
Br$_2$-*o*-tolidine : R$_1$=Me, R$_2$=Br, R$_3$=H
***o*-dianisidine** : R$_1$=MeO, R$_2$=R$_3$=H
3,5-TMB : R$_1$=R$_2$=Me, R$_3$=H



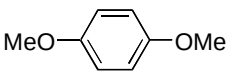
1,6-DAP : R$_1$=NH$_2$, R$_2$=H
TDAP : R$_1$=R$_2$=NMe$_2$



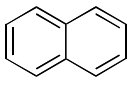
1,4-DAAQ



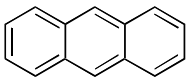
HMB



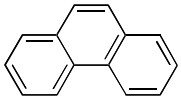
***p*-dimethoxybenzene**



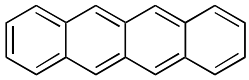
naphthalene



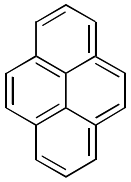
anthracene



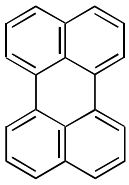
phenanthrene



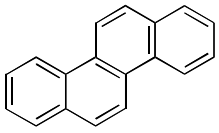
naphthacene (tetracene)



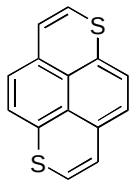
pyrene



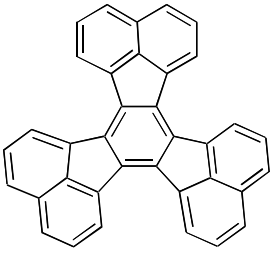
perylene



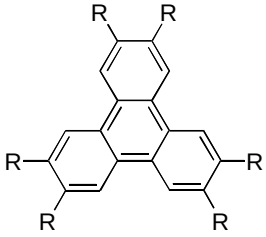
chrysene



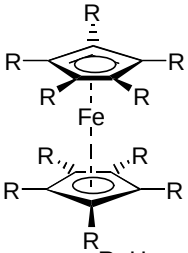
DTPY



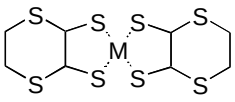
decacyclene



triphenylene : R=H
HMTP : R=MeO



ferrocene : R=H
decamethylferrocene : R=Me



Pt(dddt)$_2$: M=Pt
Ni(dddt)$_2$: M=Ni

2) Electron Acceptor

electron acceptor	in CH_3CN $E^1_{1/2}$	$E^2_{1/2}$	ΔE	in CH_2Cl CH_2Cl(DCE) or other $E^1_{1/2}$	$E^2_{1/2}$	ΔE		h ν_{CT}
p-Benzoquinone System								
DDQ	0.561*{100} 0.562{10}	-0.295*[19] -0.295*[19]	0.856 0.857	0.685{100} 0.586*{100} 0.493{10} 0.490*{100}	-0.195[15] -0.341*[15] -0.370*[20] -0.375*[20]	0.880 0.927 0.863 0.865	DCE, SCE DCE, Ag AN, Ag AN, Ag	11.7$_6$
CDDQ								
DBDQ	0.531*{100} 0.537{10}	-0.293*[23] -0.279[23]	0.824 0.816	0.675{100} 0.568*{100} 0.474{10} 0.474*{100}	-0.220[15] -0.328*[15] -0.339[23] -0.350*[23]	0.895 0.896 0.813 0.824	DCE, SCE DCE, Ag AN, Ag AN, Ag	11.6$_6$
DIDQ	0.514{10} 0.510{100}	-0.280[21] -0.280[21]	0.794 0.790	0.452{10}	-0.346[ ]	0.798	AN, Ag	11.8$_3$
2,3-Q(CN)$_2$	0.345*{100} 0.348{10} 0.338{5}	-0.492*[21] -0.408*[22] -0.395*[22]	0.837 0.756 0.733					13.6$_1$
p-QF_4	0.042*{100} 0.041{10}	第2波? [20]		0.032*{50} -0.021{10}[20]	-0.802*[20] 2波目?	0.834	DCE, Ag AN, Ag	17.0$_4$
p-QCl_4	0.048*{100} 0.050{10} 0.071{100} 0.060{20}	-0,770*[19] -0.768*[19] -0.686*[15] -0.690[15]	0.818 0.818 0.757 0.750	0.141{100} 0.039{100} -0.013{10} -0.011{100}	-0.642[20] -0.751*[20] -0.840[19] -0.840*[19]	0.783 0.790 0.827 0.829	DCE, SCE DCE, Ag AN, Ag AN, Ag	15.9$_7$
p-QBr_4	0.044{100} 0.044{10}	-0.746*[19] -0.746[19]	0.790 0.790	0.034{50} -0.025{10} -0.025{100}	-0.734[20] -0.815*[19] -0.825*[19]	0.768 0.790 0.800	DCE, Ag AN, Ag AN, Ag	15.8$_2$
p-QI_4	-0.019{10} -0.003{100}	-0.690[22] -0.692*[22]	0.671 0.689	-0.070{10}	[ ]		AN, Ag	16.1$_3$
2,6-QCl_2	-0.152{10} -0.149{100}	-0.913[24] -0.913[24]	0.761 0.764	-0.194{10}	-0.773[ ]	0.579	AN, Ag	18.1$_5$
2,5-QCl_2	-0.169{50} -0.170{10} -0.147{10} -0.158{100}	第2波? -0.785[23] -0.786[23]	 0.638 0.628	-0.197{10}	-0.740[ ]	0.543	AN, Ag	18.0$_5$
$QCl_2(OH)_2$	-0.160{100}[19] peak -0.130{10} peak			-0.235{100}[19]peak -0.200{10}[ ]peak			AN, Ag	18.6$_6$
$QBr_2(OH)_2$	-0.158{100}[24] peak -0.121{10} peak			-0.235{100}[24]peak -0.202{10}[ ]peak			AN, Ag AN, Ag	
$Q(OH)_2$	-0.420{100}[18] peak -0.375{10} peak			-0.462{10}[18]peak			AN, Ag	
$C_{18}QMe$	-0.64{20}							
QBr_2Me_2	-0.320{100} -0.318{20}	-1.039[20]	0.719					
Q	-0.460*{100} -0.456{20} -0.482{10} -0.475{100}	[21] [21] [24] [24]		-0.507{10}			AN, Ag	21.7$_9$

Naphthoquinone System

DCNNQ	0.383{10} 0.384*{100}	-0.409[21] -0.412*[21]	0.792 0.796	0.303{10}	-0.483[ ]	0.786	AN, Ag	13.1$_8$
DCNQ	0.210*{100} 0.214{10}	-0.626*[20] -0.612[20]	0.836 0.826	0.147{10} 0.147{100}	-0.683*[20] -0.695*[20]	0.830 0.842	AN, Ag AN, Ag	14.6$_0$
Cl_2NNQ	-0.203{100}	-1.060 peak		-0.255{10}	-1.042 peak		AN, Ag	17.7$_9$
Cl_2NQ	-0.379{100} -0.376{20} -0.391*{10} -0.398*{100}	-0.967*[20] -0.961[20] -1.077[24] -1.031*[24]	0.588 0.585 0.686 0.633	-0.449*{10}	-1.077[ ]	0.628	AN, Ag	19.6$_9$
Br_2NQ	-0.412{100} -0.415{50}	-1.250 peak						
NQ	-0.679{10} -0.674{5} -0.675{10} -0.674*{100}	 [24] [24]		-0.713*{10}			AN, Ag	22.1$_2$

DCNQI System

Me_4DCNQI	-0.033{100} -0.036{10}	? [18] -0.549*[18]		-0.114{10}	-0.633[18]	0.519	AN, Ag	
C_{18}MeDCNQI	約0.095{200} 0.090{500}	?						

TCNQ System

TCNQ	0.218{100} 0.222{10} 0.232{200} 0.200{100} 0.245{100}	-0.333*[18] -0.335[18] -0.313[21] -0.346[16] -0.302*[14]	0.551 0.557 0.545 0.546 0.547	0.320{100} 0.228*{100 0.113{100} 0.169{100} 0.153{10} 0.154{100}	-0.275[15] -0.365*[15] -0.423[16] -0.381[21] -0.402[18] -0.396*[18]	0.595 0.593 0.536 0.550 0.555 0.550	DCE, SCE DCE, Ag AN, Ag, TEA AN, Ag AN, Ag AN, Ag	12.8$_2$
F_4TCNQ	0.601{100} 0.600{10} 0.600{100} 0.615{50}	0.054*[19] 0.052[19] 0.070[15] 0.073*[14]	0.547 0.548 0.530 0.542	0.743{100} 0.638*{100 0.528{20} 0.528{100}	0.078 [15] -0.024*[15] -0.015[19] -0.015*[19]	0.665 0.662 0.543 0.543	DCE, SCE DCE, Ag AN, Ag AN, Ag	12.0$_6$
CF_3TCNQ	0.435{10} 0.438{10} 0.435{100}	-0.140[-0.136[21] -0.137[21]	0.575 0.574 0.572	0.359{10}	-0.205[22]	0.564	AN, Ag	11.6$_0$
F_2TCNQ	0.412{100} 0.408{10}	-0.137[22] -0.132[22]	0.549 0.540	0.345{10} 0.343{100}	-0.211[22] -0.207[22]	0.556 0.550	AN, Ag AN, Ag	11.5$_9$
FTCNQ	0.325{100} 0.321{10} 0.340{100}	-0.232[23] -0.235[23] -0.212*[14]	0.557 0.556 0.552	0.431{100} 0.331*{100 0.258{10} 0.256{100}	-0.185[15] -0.290*[15] -0.304[23] -0.298[23]	0.616 0.621 0.562 0.554	DCE, SCE DCE, Ag AN, Ag AN, Ag	12.2$_7$
TNAP	0.260{10} 0.259{100}	-0.110[23] -0.109[23]	0.370 0.368	0.179{10} 0.174{100}	-0.194[23] -0.198[23]	0.373 0.372	AN, Ag AN, Ag	
C_{10}TCNQ	0.203{100} 0.205{10}	-0.328[20] -0.323[20]	0.531 0.528	0.127{10} 0.128{100}	-0.398[20] -0.396[20]	0.525 0.524	AN, Ag AN, Ag	13.6$_1$
C_{14}TCNQ	0.208{100} 0.210{10}	-0.317[21] -0.318[21]	0.525 0.528	0.124{10} 0.123{100}	-0.406[20] -0.403[20]	0.530 0.526	AN, Ag AN, Ag	14.0$_1$
C_{18}TCNQ	0.170{100} 0.180{50}	-0.365[ ] -0.370[ ]	0.535 0.550					

C_{22}TCNQ	0.180{200}	-0.370[ ]	0.550					
DHBTCNQ	0.185{100} 0.184{10}	-0.308*[19] -0.313[19]	0.493 0.497	0.117{10} 0.155{100}	-0.373[19] -0.374[19]	0.490 0.489	AN, Ag AN, Ag	13.3_7
THBTCNQ	0.160{100} 0.160{10}	-0.330*[19] -0.327[19]	0.490 0.487	0.094{10} 0.093{100}	-0.391[19] -0.395[19]	0.485 0.488	AN, Ag AN, Ag	13.6_2
Et_2TCNQ	0.155{100} 0.151{10}	-0.338[23] -0.337[23]	0.493 0.488	0.095{10} 0.100{100}	-0.399[23] -0.393[23]	0.494 0.493	AN, Ag AN, Ag	13.9_1
Me_2TCNQ	0.147{100} 0.147{10} 0.168{100}	-0.339*[19] -0.338[19] -0.301*[14]	0.486 0.485 0.469	0.245{100} 0.135*{100 0.079{10} 0.078{100}	-0.303[15] -0.404*[15] -0.410[19] -0.415[19]	0.548 0.539 0.489 0.493	DCE, SCE DCE, Ag AN, Ag AN, Ag	13.7_4
TCNNQ	0.061{100} 0.070{10}	-0.309[22] -0.313[22]	0.37 0.383	-0.006{10} -0.004{100	-0.387 -0.378[22]	0.393 0.374	AN, Ag AN, Ag	14.6_4
$(MeO)_2$TCNQ	0.054{100} 0.053{10} 0.058{100}	-0.434*[19] -0.435[19] -0.418*[14]	0.488 0.488 0.476	0.095{100} -0.005{100 -0.027{10}	-0.383[15] -0.528[15] -0.520*[19]	0.478 0.523 0.493	DCE, SCE DCE, Ag AN, Ag	14.7_1
BTDA-TCNQ	0.034{100} 0.032{10}	-0.449*[18] -0.444[18]	0.483 0.476	0.152{100} 0.055{100} -0.044{10} -0.043{100	-0.388[20] 0.483[20]、 -0.512[18] -0.525*[18	0.540 -1.208(3波目) 0.468 0.482	DCE, SCE DCE, Ag AN, Ag AN, Ag	14.4_1
$(EtO)_2$TCNQ	0.008{10} 0.01{100}	-0.462[23] -0.46[23]	0.470 0.47	-0.043{10}	-0.516[22]	0.473	AN, Ag	15.2_9
Me_4TCNQ	-0.045{100} 一波のみ -0.048{10} 〃 -0.045{5} 〃			-0.108{10} 1波のみ -0.110{100} 〃			AN, Ag AN, Ag	19.3_1 (sh)
TCAQ	-0.322(2e){10}[20] -0.329(2e){100}[20]							
TCNDQ2-	0.17{100} 0.15{10}	0.015[23] 0.019[23]	0.155 0.131					

TNF System

DTENF	0.229{100} 0.234{10}	-0.359[19] -0.357[19]	0.588 0.591	0.152{10} 0.152{100}	-0.436[19] -0.441*[19]	0.588 0.593	AN, Ag AN, Ag	14.0_1
DTNF	0.017{100} 0.019{10}	-0.605*[20] -0.607[20]	0.622 0.626	-0.056{10} -0.059{100}	-0.687[20] -0.692[20]	0.631 0.633	AN, Ag AN, Ag	15.6_2
TENF	-0.140{100} -0.138{10}	-0.407[19] -0.406[19]	0.267 0.268	-0.217{10} -0.221{100}	-0.487[19] -0.490*[19]	0.270 0.269	AN, Ag AN, Ag	16.5_4
TNF	-0.425{100} -0.425{10}	-0.667[20] -0.668[20]	0.242 0.243	-0.496{10} -0.495{100}	-0.730[20] -0.732*[20]	0.234 0.237	AN, Ag AN, Ag	18.7_3

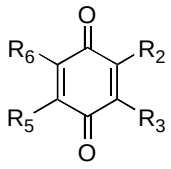
Nitro Compounds

TNBP ﾃﾄﾗﾆﾄﾛﾋﾞﾌｪﾉｰﾙ	-0.595{100}[19] -0.560{10}[19] 共にpeak			-0.640{10}[19] peak -0.690{100}[19] peak			AN, Ag AN, Ag	22.1_2 (sh)
H-PICﾋﾟｸﾘﾝ酸	-0.24{20}[ ] peak ?							
TBA(PIC)	peak無し [20]							
DNBP ｼﾞﾆﾄﾛﾋﾞﾌｪﾆﾙ	-0.979*{100} [20] -0.976{10} [20]			-1.057{10} [20] -1.059{100}[20]			AN, Ag AN, Ag	

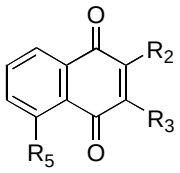
Percyano System

TCNE	0.286{100} 0.270{100}	−0.916*[20] −0.775*[14]	1.202 1.045	0.195{10} 0.201{100}	−1.051*[20] −0.836*[14]	1.246 1.037	AN, Ag AN, Ag	13.5$_5$
HCBD	0.727{100} 0.719{10} 0.629{100}	0.056*[19] 0.048[19] 0.038[13]	0.671 0.671 0.591	0.76*{100} 0.626{10} 0.624{100}	−0.04*[14] −0.045[20] −0.050*[20]	0.80 0.671 0.674	DCE, Ag AN, Ag AN, Ag	9.8$_5$
KC(CN)$_3$	1.34{100}[19	peak(−1→0)						
TBA(PCA)	peak(−1→0)	[20]		peak(−1→0)無し [24] peak 1.25{20}[19]			DCE, SCE AN, Ag	
TBA$_2$(HCP)	−2→−1 1.210{100} 1.208{10}	−1→0 0.419[19] 0.420[19]	0.791 0.788	1.130{10} 1.130{100}	0.343[18] 0.339[18]	0.787 0.791	AN, Ag AN, Ag	
TBA$_2$(HCTMM)	−2→−1 peak 1.20{100} 1.16{10}	−1→0 peak 0.99[20] 0.96[20]	0.21 0.20	−2→−1peak 1.290{200} 1.139{200} 1.02{200} 1.08{20}	−1→0 peak 1.095[24] 0.946[24] 0.845[rt] 0.89[20]	0.195 0.193 0.175 0.19	DCE, SCE DCE, Ag BN, Ag AN, Ag	

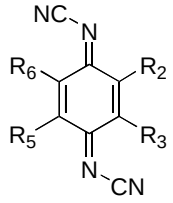
I_2	0.657{10} 0.654{100}	0.221*[20] 0.195*[20]	0.436 0.459				
TBA·I	0.233{10} 0.200*{100}	[19] [19]					
TBA·I_3	0.642{10} 0.645{100}	0.243[20] 0.214*[20]	0.399 0.431	0.55*{200}[rt] 1波のみ			DCE, Ag
TBA·I_5				0.658{10} 0.660{100}	[20] [20]		



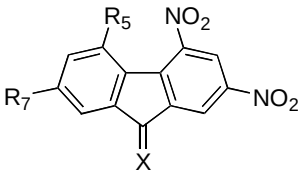
DDQ : R_2=R_3=Cl, R_5=R_6=CN
DBDQ : R_2=R_3=Br, R_5=R_6=CN
CDDQ : R_2=R_5=Cl, R_3=R_6=CN
p-QF$_4$ (*p*-Fluoranil) : R_2=R_3=R_5=R_6=F
p-QCl$_4$ (*p*-Chloranil) : R_2=R_3=R_5=R_6=Cl
p-QBr$_4$ (*p*-Bromanil) : R_2=R_3=R_5=R_6=Br
p-QI$_4$ (*p*-Iodanil) : R_2=R_3=R_5=R_6=I
2,3-Q(CN)$_2$: R_2=R_3=CN, R_5=R_6=H
2,6-QCl$_2$: R_2=R_6=Cl, R_3=R_5=H
2,5-QCl$_2$: R_2=R_5=Cl, R_3=R_6=H
QCl$_2$(OH)$_2$ (Choloranillic Acid) : R_2=R_5=Cl, R_3=R_6=OH
QBr$_2$(OH)$_2$ (Bromanillic Acid) : R_2=R_5=Br, R_3=R_6=OH
Q(OH)$_2$: R_2=R_5=OH, R_3=R_6=H
C$_{18}$QMe : R_2=Me, R_5=$C_{18}H_{37}$, R_3=R_6=H
QBr$_2$Me$_2$: R_2=R_5=Br, R_3=R_6=Me
Q : R_2=R_3=R_5=R_6=H



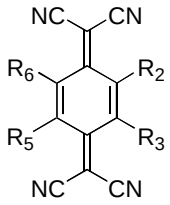
DCNNQ : R_2=R_3=CN, R_5=NO_2
DCNQ : R_2=R_3=CN, R_5=H
Cl$_2$NNQ : R_2=R_3=Cl, R_5=NO_2
Cl$_2$NQ : R_2=R_3=Cl, R_5=H
Br$_2$NQ : R_2=R_3=Br, R_5=H
NQ : R_2=R_3=R_5=H



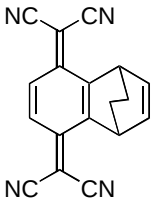
Me$_4$DCNQI : R_2=R_3=R_5=R_6=Me
C$_{18}$MeDCNQI : R_2=Me, R_5=$C_{18}H_{37}$
R_3=R_6=H



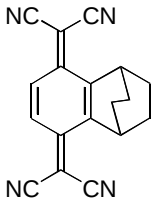
DTENF :X=C(CN)$_2$, R_5=R_7=NO_2
DTNF : X=C(CN)$_2$, R_5=H, R_7=NO_2
TENF : X=O, R_5=R_7=NO_2
TNF : X=O, R_5=H, R_7=NO_2



TCNQ : R_2=R_3=R_5=R_6=H
CF$_3$TCNQ : R_2=CF_3
R_3=R_5=R_6=H
C$_n$TCNQ : R_2=C_nH_{2n+1}
R_3=R_5=R_6=H
2 置換体は 2,5-置換体



DHBTCNQ



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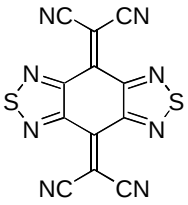
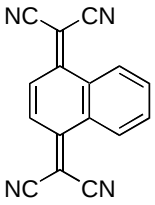
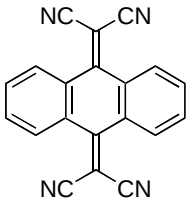


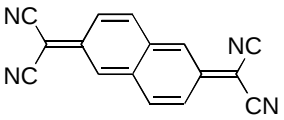
BTDA-TCNQ



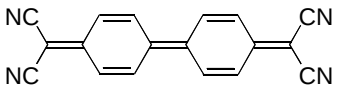
TCNNQ



TCAQ



TNAP



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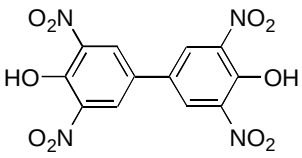
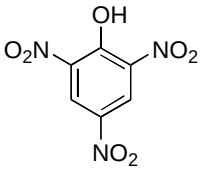
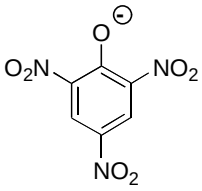


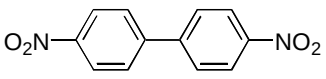
TNBP



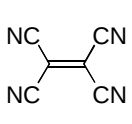
H-PIC (Picric Acid)



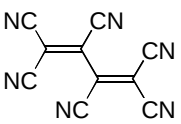
PIC$^-$



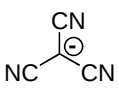
DNBP



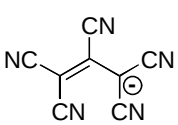
TCNE



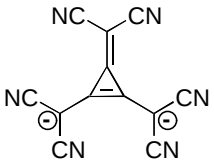
HCBD



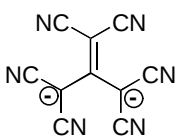
C(CN)$_3^-$ (CF^-)



PCA$^-$



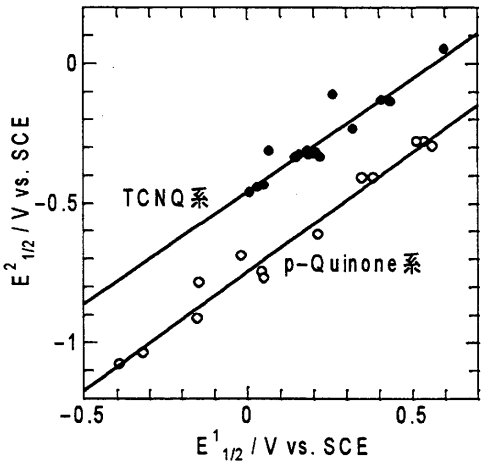
HCP^{2-}

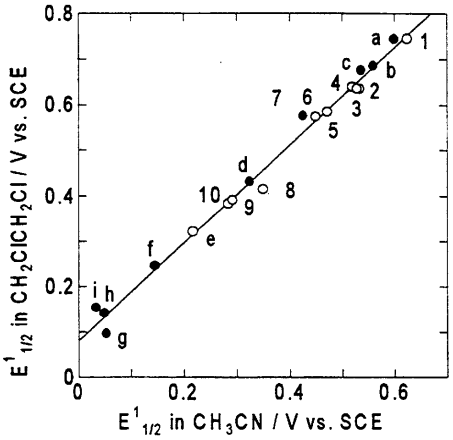


HCTMM^{2-}

以下に、相関が見られる
1）酸化還元電位 $E^2_{1/2}$ と $E^1_{1/2}$ の関係
例 p-キノン系 $E^2_{1/2} = (0.85 \pm 0.05)\ E^1_{1/2} - (0.75 \pm 0.03)$
TCNQ系 $E^2_{1/2} = (0.81 \pm 0.05)\ E^1_{1/2} - (0.46 \pm 0.03)$

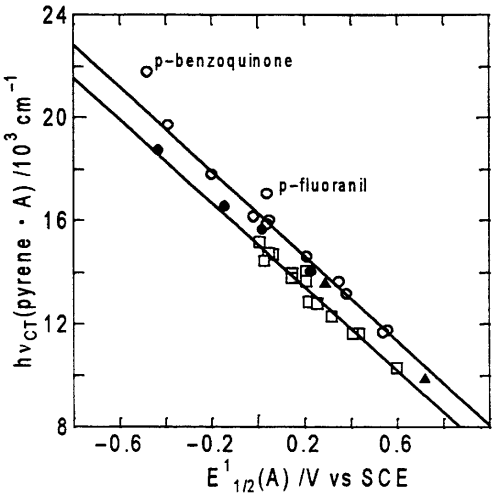
2）溶媒 CH_3CN と CH_2ClCH_2Cl の酸化還元電位 $E^1_{1/2}$ に対する効果
$E^1_{1/2}$（ジクロルエタン）$= 1.09 E^1_{1/2}$（アセトニトリル）$+ 0.072$
1. DBTTF, 2. C_7TET-TTF, 3. TTC_1-TTF, 4. BEDT-TTF, 5. TSC_1-TTF, 6. TMTSF, 7. フェロセン, 8. TTF, 9. TMTTF, 10. OMTTF
a. F_4TCNQ, b. DDQ, c. DBDQ, d. FTCNQ, e. TCNQ, f. Me_2TCNQ, g. $(MeO)_2$TCNQ, h. p-クロラニル, i. BTDA-TCNQ

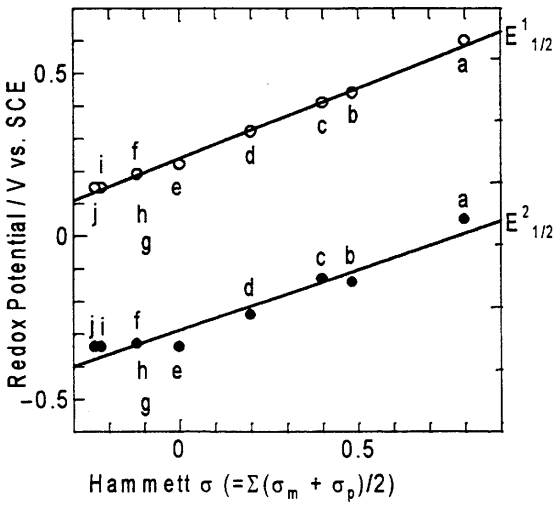




3）種々のアクセプター分子のピレン錯体の電荷移動吸収エネルギー $h\nu_{CT}^N$（クロロホルム溶液）と酸化還元電位 $E^1_{1/2}$ との関係。□：TCNQ系、○：p-キノン系、▲：ペルシアノ系、●：フルオレン系。p-キノン系での直線は、p-フルオラニル、p-ベンゾキノンを除いた最小自乗法により求めた。

4）Hammett σ と 酸化還元電位 $E^1_{1/2}$ の関係
TCNQ系の第一、第二酸化還元電位 $E^1_{1/2}$, $E^2_{1/2}$ とHammett σ との関係。
$E^1_{1/2} = 0.437\ (\sigma_m + \sigma_p)/2 + 0.236$
$E^2_{1/2} = 0.385\ (\sigma_m + \sigma_p)/2 - 0.292$
a. F_4TCNQ, b. CF_3TCNQ, c. F_2TCNQ, d. FTCNQ, e. TCNQ, f. MeTCNQ, g. $(EtO)_2$TCNQ, h. $(MeO)_2$TCNQ, i. Et_2TCNQ, j. Me_2TCNQ

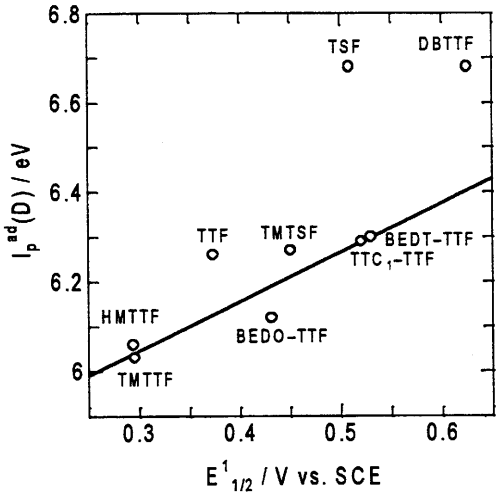


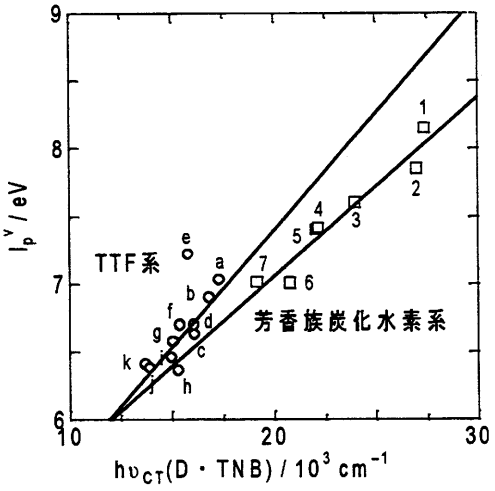


5）ＴＴＦ系でのイオン化電位(断熱値）と酸化還元電位 $E^{1}_{1/2}$の関係。　直線はDBTTF、TSF、TTFを除いた最小自乗直線
I_p^{ad} (D) ＝1.08 e $E^{1}_{1/2}$ (D)　＋　5.73

6）芳香族炭化水素およびＴＴＦ系ドナーのイオン化電位（垂直値）と h ν_{CT} (Ｄ・ＴＮＢ）の関係
1．ナフタレン、2．フェナントレン、3．クリセン、4．ピレン、5．アントラセン、6．ペリレン、7．ナフタセン、
a. DBTTF, b. TSF, c. TTC_1-TTF, d. BEDT-TTF, e. HMTTeF, f. TTF, g. TMTSF, h. BEDO-TTF, i. TMTTF, j. HMTTF

図５，６中のイオン化電位は主に佐藤直樹「紫外光電子分光法による芳香族固体の物性化学（分光研究、36,243(1987)）より。





7）p-フェニレンジアミン系、ベンジジン系、アジン系、ＴＴＦ系の電荷移動吸収エネルギーと$E^{1}_{1/2}$の関係