

Table 1

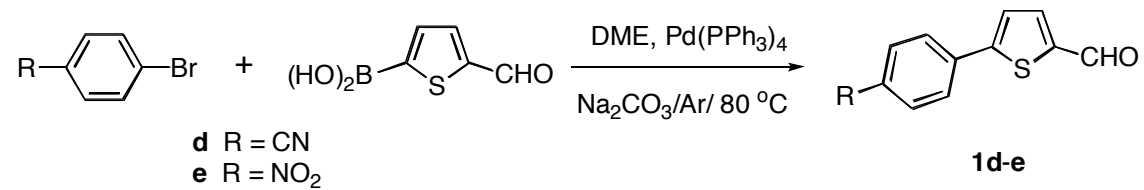
Formyl- arylthiophene	Arylthienyl- phenanthroline	R	Yield (%)	IR ν (cm^{-1})	δ_{H} (ppm) ^d	UV-vis. λ_{max} (nm) ^e (log ϵ)	β (10^{-30} esu) ^f	β_0 (10^{-30} esu) ^g	T_d ($^{\circ}\text{C}$) ^h
1a	3a	H	95	3441 ^c	13.86	361.0 (4.16)	41	20	470
1b	3b	OMe	50	3410 ^c	13.84	370.0 (4.48)	145	66	431
1c	3c	NMe ₂	60	3450 ^b	13.80	391.0 (4.34)	189	75	448
1d	3d	CN	75	3480 ^b	not visible	386.0 (4.45)	91	38	465
1e	3e	NO ₂	86	3453 ^a	14.00	408.0 (4.12)	45	16	450
1f	4	---	80	3435 ^a	13.79, 13.89	399.0 (4.30)	---	---	739
---	<i>p</i> NA	---	---	---	---	352.0	16.9	8.5	---

Table 2

Solvent ^a	π^*	3a		3b		3c		3d		3e		4	
		λ_{max}	ν_{max}	λ_{max}	ν_{max}	λ_{max}	ν_{max}	λ_{max}	ν_{max}	λ_{max}	ν_{max}	λ_{max}	ν_{max}
EtOH	0.54	362.0	27624	367.0	27247	388.0	25773	380.0	26316	399.0	25062	393.0	25445
dioxane	0.55	361.0	27700	370.0	27027	391.0	25575	386.0	25906	408.0	24510	399.0	25063
CHCl ₃	0.76	359.0	27855	360.5	27739	388.0	25773	387.0	25839	407.0	24570	390.0	25641
DMF	0.88	371.0	26954	371.0	26954	391.0	25575	388.0	25773	413.0	24213	400.0	25000
DMSO	1.00	373.0	26809	375.0	26666	393.0	25445	390.0	25641	416.0	24038	404.0	24752

Schemes

Scheme 1



Scheme 2

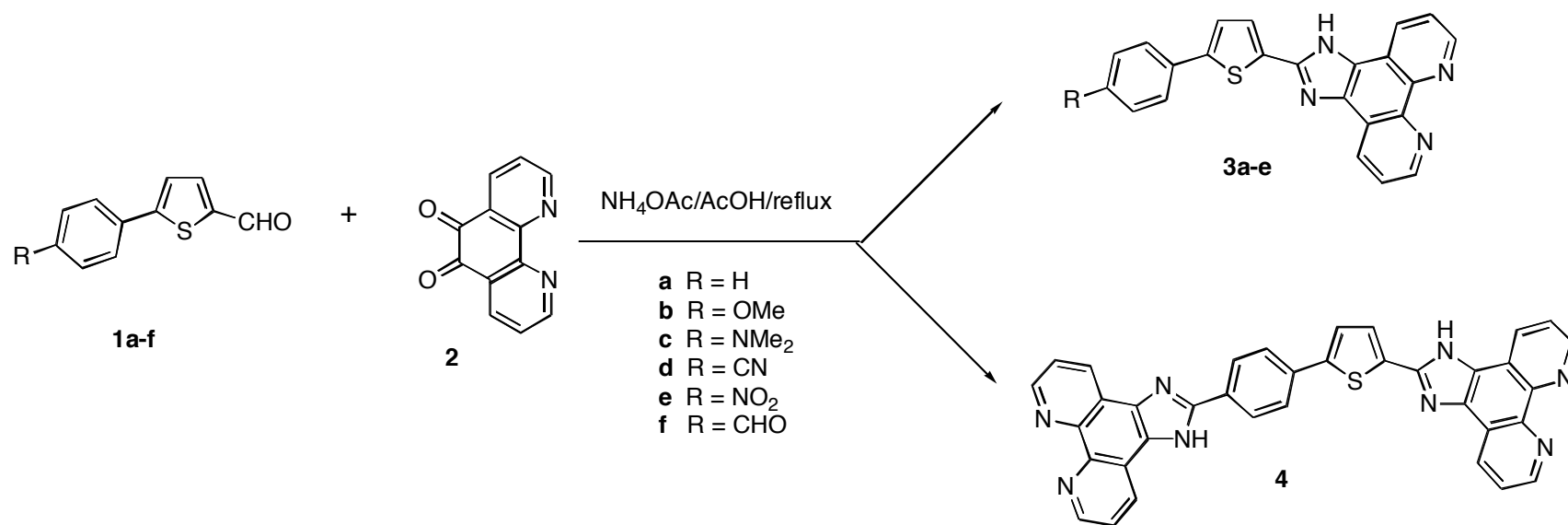
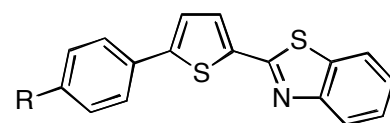
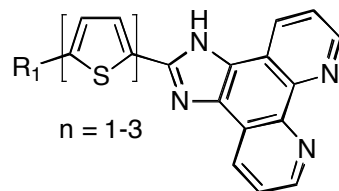


Figure 1



- 5a** R = OMe
- b** R = 2,4-diOMe
- c** R = OEt
- d** R = OH
- e** R = NMe₂
- f** R = phenyl
- g** R = phenoxy
- h** R = 1-naphthyl
- i** R = F

Figure 2



- 6a** R₁ = H, n = 1
- 6b** R₁ = MeO, n = 1
- 6c** R₁ = H, n = 2
- 6d** R₁ = MeO, n = 2
- 6e** R₁ = H, n = 3