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Supporting Information

ANTHRACENEDICARBOXIMIDE-BASED SEMICONDUCTORS FOR AIR-STABLE, N-CHANNEL ORGANIC THIN-FILM TRANSISTORS: MATERIALS DESIGN, SYNTHESIS, AND STRUCTURAL CHARACTERIZATION

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Table S1. Carrier Mobilities (μ), Threshold Voltages (V_{th}), and Current on/off Ratios (I_{on}/I_{off}) for OTFTs of compounds **1** – **6** under vacuum and in ambient at various substrate temperatures.

Compound	T_D (°C)	μ (cm^2/Vs)	I_{on}/I_{off}	V_{th}(V)	Substrate
ADI8	25	7.0×10^{-3}	3.3×10^{6}	60	HMDS
	60	1.2×10^{-2}	2.2×10^{7}	50	
	90	2.0×10^{-2}	7.0×10^{6}	45	
	120	2.5×10^{-3}	2.1×10^{6}	45	
	90	3.6×10^{-6}	230	140	
	120	2.4×10^{-6}	440	120	
	25	1.1×10^{-4}	2.0×10^{5}	70	SiO_2
	60	3.0×10^{-5}	1.6×10^{6}	55	
	90	2.0×10^{-5}	6.9×10^{4}	45	
	120	5.0×10^{-5}	2.4×10^{4}	45	
ADI8-Br_2 (vac)	90	0.010	1.5×10^{6}	56	HMDS
ADI8-Br_2 (air)	90	4×10^{-4}	1.3×10^{6}	65	HMDS
ADI8-CN_2 (vac)	25	0.006	1×10^{6}	24	HMDS
	70	0.023	2×10^{7}	20	
	90	0.03	5×10^{6}	17	
	110	0.029	1×10^{7}	26	
ADI8-CN_2 (air)	25	0.003	2×10^{6}	23	HMDS
	70	0.014	3×10^{7}	20	
	90	0.02	4×10^{7}	22	
	110	0.02	6×10^{6}	18	
ADI8-CN_2 (vac)	25	0.006	2×10^{5}	14	SiO_2
	70	0.005	1×10^{6}	14	
	90	0.007	2×10^{5}	13	
	110	0.005	4×10^{5}	13	
ADI8-CN_2 (air)	25	0.002	1×10^{6}	28	SiO_2
	70	0.001	1×10^{5}	18	
	90	0.001	6×10^{6}	13	
	110	0.003	3×10^{6}	13	
ADIF-Br_2 (vac)	25	1.1×10^{-4}	3×10^{5}	86	HMDS
	70	0.01	1.8×10^{5}	53	
ADIF (vac)	25	3.0×10^{-4}	1×10^{4}	68	HMDS
	70	0.001	3.0×10^{4}	64	
ADIF-Br_2 (air)	25	5×10^{-6}	1×10^{4}	94	HMDS
	70	0.001	1×10^{6}	64	
ADIF-CN_2 (vac)	25	1×10^{-4}	3×10^{5}	86	HMDS
	70	0.06	1×10^{5}	10	
	90	0.06	1×10^{5}	21	
	110	0.008	7×10^{5}	20	
ADIF-CN_2 (air)	25	4×10^{-6}	1×10^{4}	94	HMDS
	70	0.04	5×10^{4}	12	
	90	0.033	6×10^{4}	18	
	110	0.007	2×10^{5}	34	
ADIF-CN_2 (vac)	25	0.03	5×10^{3}	16	SiO_2
	70	0.05	1×10^{3}	-1	
	90	0.05	5×10^{3}	6	
	110	0.02	3×10^{3}	1	
ADIF-CN_2 (air)	25	0.014	5×10^{3}	16	SiO_2
	70	0.03	2×10^{3}	-3	
	90	0.03	3×10^{3}	5	
	110	0.008	3×10^{3}	3	