Supporting Information for

Constructing bulk-contact inside single crystals of organic semiconductors through gel incorporation †

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Supporting Figures



Fig. S1 Powder X-ray diffraction patterns of anthracene and 9,10-Diphenylanthracene (DPA) crystals grown from silica gel and 8% phenyl-modified silica gel. For comparison, the standard patterns are shown. The standard diffraction pattern of DPA was calculated using the lattice parameters provided in Ref. 1.



Fig. S2 Optical microscope (OM) images of anthracene crystals grown from 16.7 v/v% silica gel before (a), during (b) and after (c) sublimation of the crystals.



Fig. S3 Photo of 12.5 v/v% phenyl-modified silica sols with c_{Ph} of 2% (a), 4% (b), 6% (c), 8% (d) and 9% (e). For gelation, the solutions were left to stand for 2 weeks but gel did not form in the solution with c_{Ph} of 9%.



Fig. S4 A SEM image of the left gel network after fully sublimation of the anthracene crystal grown from 16.7 v/v% modified gels with c_{ph} of 9%.



Fig. S5 Series of OM images recording the process of multi-step sublimation of an anthracene crystal grown from 16.7 v/v% modified gel with c_{ph} of 9%.



Fig. S6 The measured/calculated mass ratio of Si incorporated into the DPA crystals grown from silica gels and 8% phenylmodified silica gels. The relative Si content, defined as the proportion of the measured Si content to the calculated one, is also shown.

Supporting Tables

Table S1 Formulae of each gel. The density values used for calculation: TMOS (1.023 g/ml); PTMS (1.07 g/mL); Anthracene (1.28 g/cm³); DPA (1.146 g/cm³).

No.	C _{Ph}	TMOS /mL	PTMS /mL	Acetone solution /mL	HCl(aq) /mL	NaOH (aq) /mL	Non-solvent/mL	
							Ethanol	Water
Anthracene (3.5 mg/mL in acetone)								
1	0%	1.25	-	7.75	0.50 (0.001M)	0.50 (0.01M)	2.0	8.0
2	0%	1.67	-	7.33	0.50 (0.001M)	0.50 (0.01M)	2.0	8.0
3	2%	1.128	0.122	7.75	0.50 (0.01M)	0.50 (0.1M)	3.0	7.0
4	4%	1.010	0.240	7.75	0.50 (0.01M)	0.50 (0.1M)	4.0	6.0
5	6%	0.897	0.353	7.75	0.50 (0.01M)	0.50 (0.1M)	5.0	5.0
6	8%	0.788	0.462	7.75	0.50 (0.01M)	0.50 (0.1M)	5.0	5.0
7	9%	0.982	0.688	7.33	0.50 (0.01M)	0.50 (0.5M)	5.0	5.0
DPA (2.5 mg/mL in acetone)								
8	0%	1.67	-	7.33	0.50 (0.001M)	0.50 (0.01M)	2.0	8.0
9	8%	1.052	0.618	7.33	0.50 (0.01M)	0.50 (0.1M)	5.0	5.0

 Table S2 Unit cell dimensions of crystals of anthracene and DPA with gel network incorporated.

	Lattice parameter	Reference
anthracene	(9.4743, 6.0253, 8.5606; 90.1, 103.59, 90.0)	(9.4746, 6.0163, 8.5243; 90.0, 103.58, 90.0) PDF#39-1848
DPA	(10.712, 13.566, 12.279; 90.0, 90.56, 90.0)	(10.683, 13.552, 12.257; 90.0, 90.54, 90.0) [Ref.1]

References

1. V. Langer, H.-D. Becker, Z. Kristallogr, 1992, **199**, 313.