

## Supplementary Information:

### **Influence of lattice dynamics on charge transport in dianthra[2,3-b:2',3'-f]-thieno[3,2-b]thiophene organic crystal from a theoretical study**

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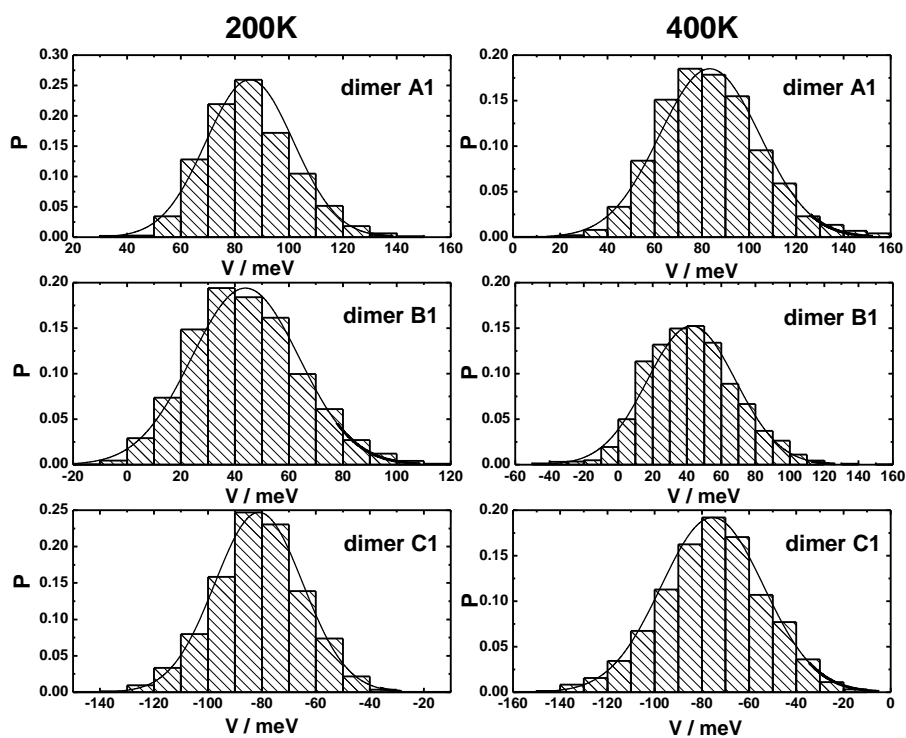


Figure S1. The normalized probability distributions of transfer integrals for nearest-neighboring dimers A1, B1 and C1 in the  $ab$  plane of DATT at 200K and 400K.

Table S1. The intermolecular distances ( $R_0$ ) and the transfer integrals ( $V_0$ ) with the equilibrium geometry at the COMPASS molecular mechanics level for the nearest-neighboring dimers of pentacene in Fig. 1(b).

| Dimers | $R_0$ (Å) | $V_0$ (meV) |
|--------|-----------|-------------|
| A1     | 6.239     | 35.6        |
| A2     | 6.239     | 35.5        |
| B1     | 4.689     | 90.8        |
| B2     | 4.689     | 90.8        |
| C1     | 5.160     | -51.7       |
| C2     | 5.160     | -51.7       |