Supporting Information

High performance A-D-A oligothiophene-based organic solar cells employing two-step annealing and solution-processable copper thiocyanate (CuSCN) as an interfacial hole transporting layer

Amaresh Mishra,*a ad Tushar Rana,b Annika Looser,a Matthias Stolte,c Frank Würthner,c Peter Bäuerle,a and Ganesh D. Sharma*b

*a Institute of Organic Chemistry II and Advanced Materials, University of Ulm, Albert-Einstein-Allee 11, 89081 Ulm, Germany
b Department of Physics, The LNM Institute of Information Technology (Deemed University), Rupa ki Nagal, Jamdoli, Jaipur, Rajasthan, 302031, India. Email: gdsharma273@gmail.com
c Institut für Organische Chemie & Center for Nanosystems Chemistry, Universität Würzburg Am Hubland 97074, Würzburg, Germany
d Current address: School of Chemistry, Sambalpur University, Jyoti Vihar-768019, Sambalpur, India. Email: amaresh.mishra@suniv.ac.in
**Figure S1.** $^1$H-NMR spectrum of dialdehyde 5 in [D8]THF (400 MHz). *solvent impurities.

**Figure S2.** $^{13}$C-NMR spectrum of dialdehyde 5 in [D8]THF (100 MHz).
Figure S3. $^1$H-NMR spectrum of compound 2 in [D8]THF (400 MHz). *solvent impurities.

Figure S4. $^{13}$C-NMR spectrum of compound 2 in [D8]THF (100 MHz).