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SUPPORTING INFORMATION

A New Rod-Shaped BODIPY-Acetylene Molecule for Solution-Processed Semiconducting Microribbons in N-Channel Organic Field-Effect Transistors

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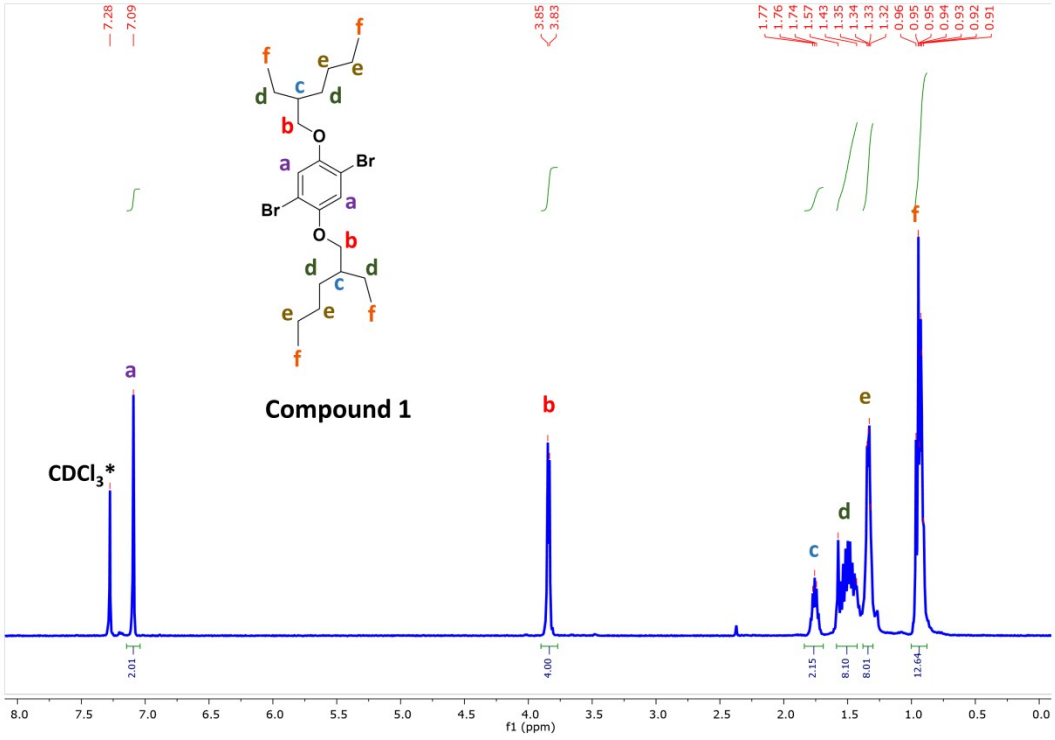

Figure S1. ^{1}H NMR spectra of compound **1** in $CDCl_3$ at room temperature.

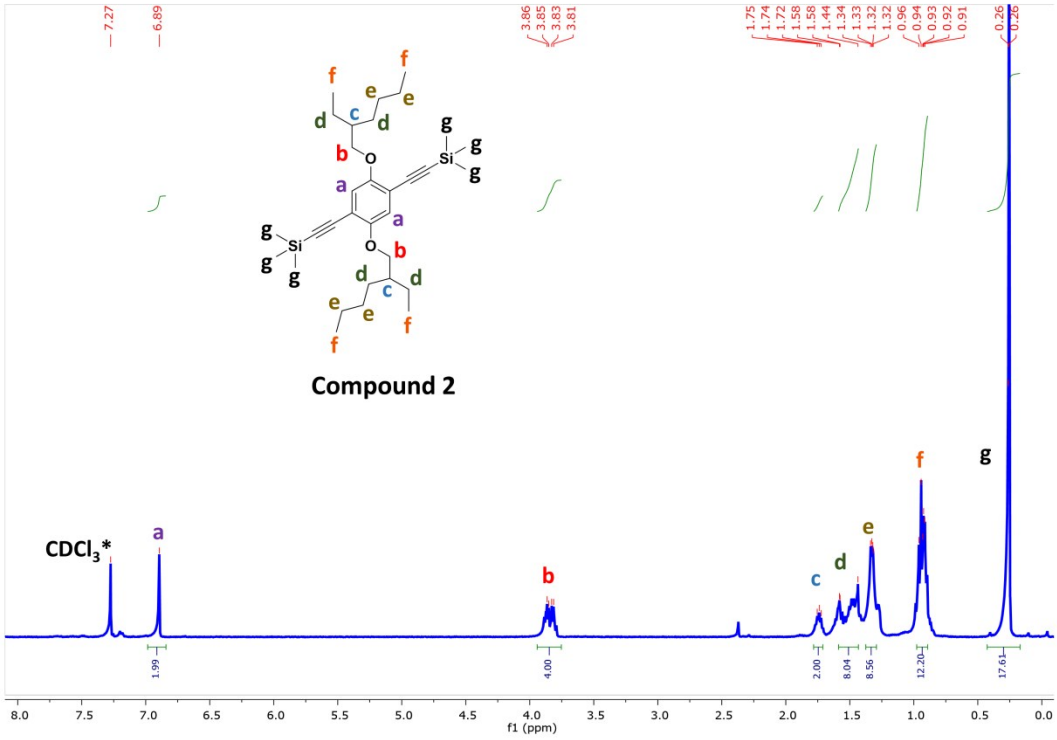

Figure S2. ^{1}H NMR spectra of compound **2** in $CDCl_3$ at room temperature.

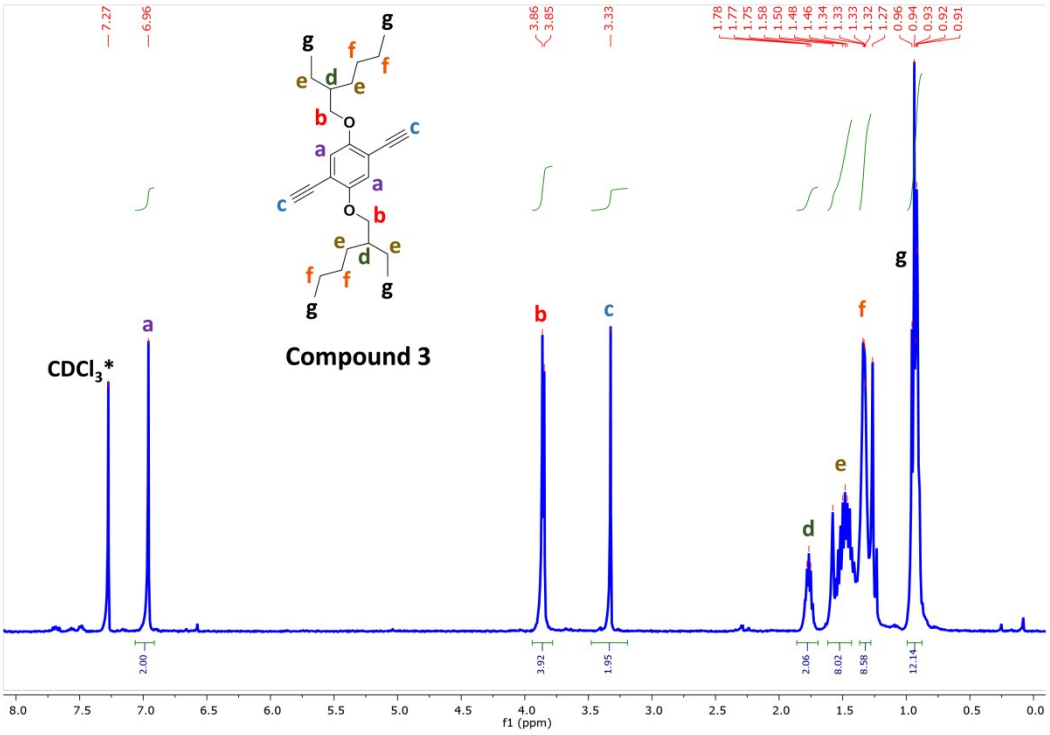

Figure S3. ^{1}H NMR spectra of compound **3** in $CDCl_3$ at room temperature.

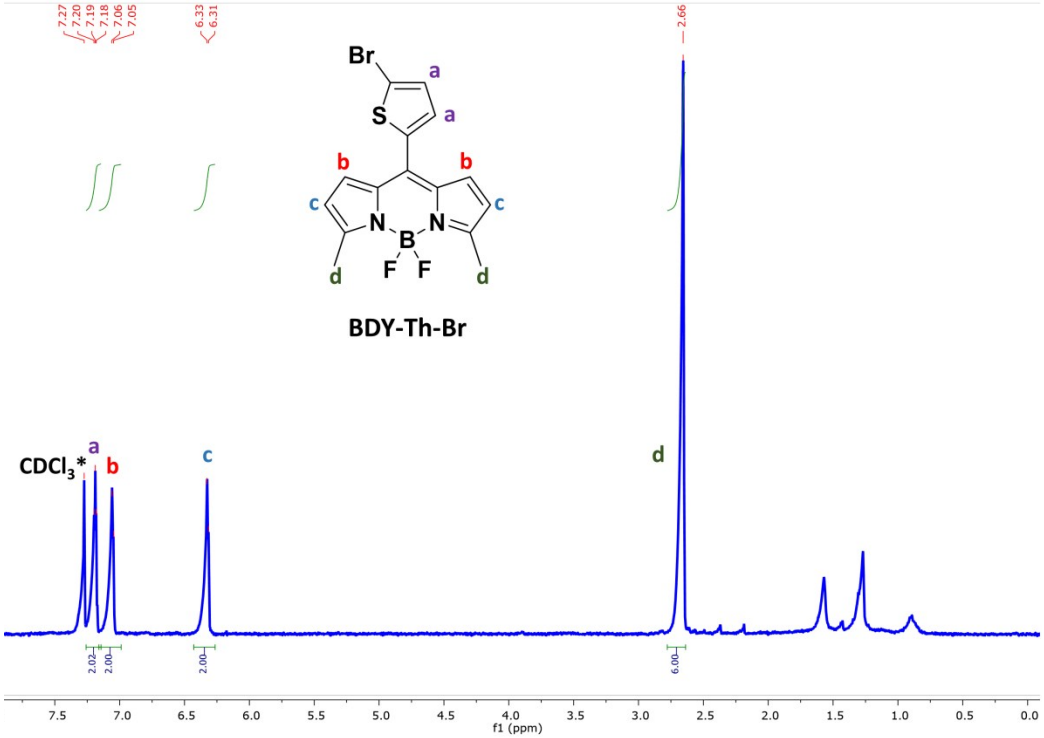

Figure S4. ^{1}H NMR spectra of compound **BDY-Th-Br** in $CDCl_3$ at room temperature.

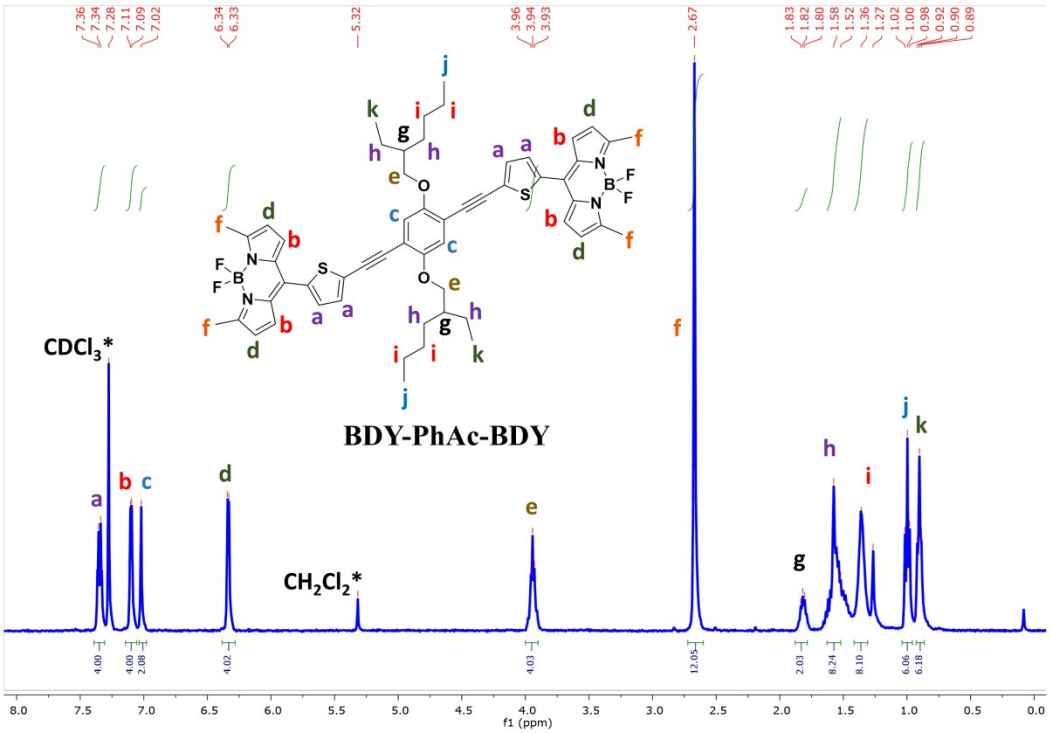

Figure S5. ^{1}H NMR spectra of compound **BDY-PhAc-BDY** in $CDCl_3$ at room temperature.

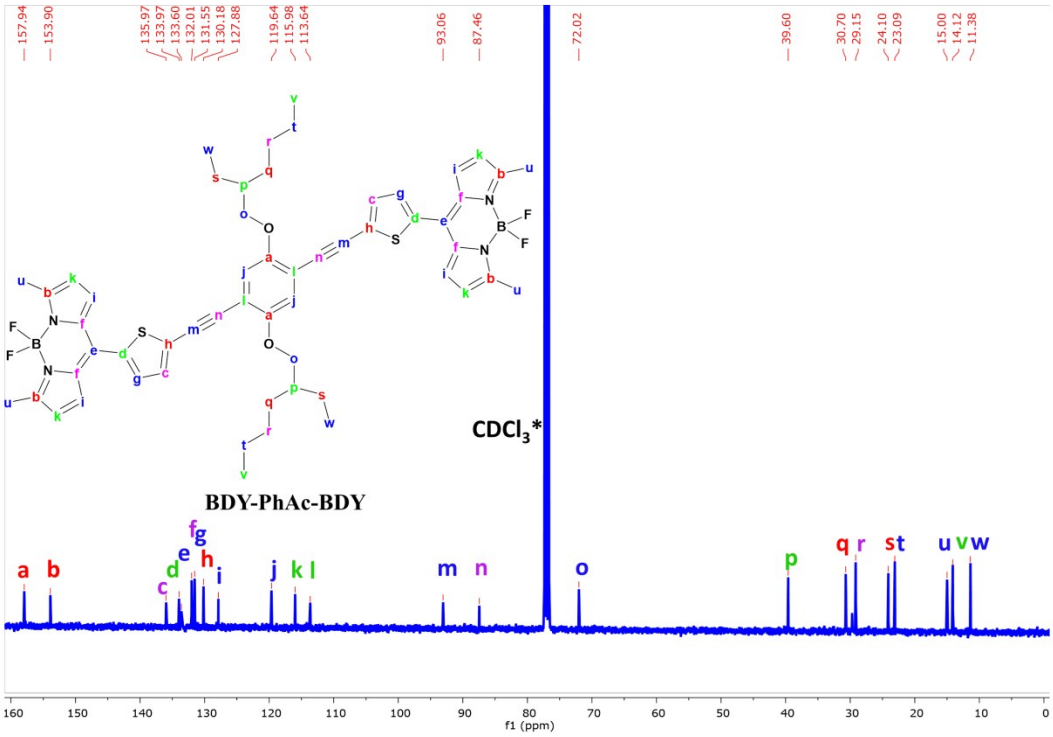

Figure S6. ^{13}C NMR spectra of compound **BDY-PhAc-BDY** in $CDCl_3$ at room temperature.

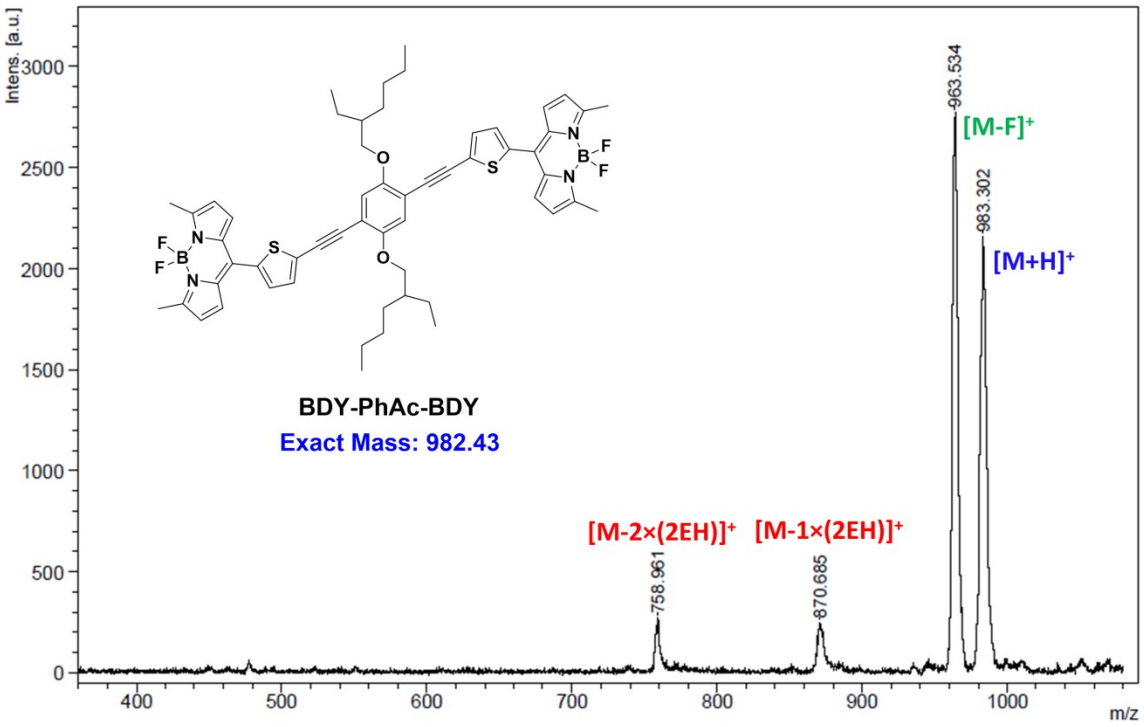

Figure S7. Positive ion and linear mode MALDI TOF-MS spectrum of **BDY-PhAc-BDY**.

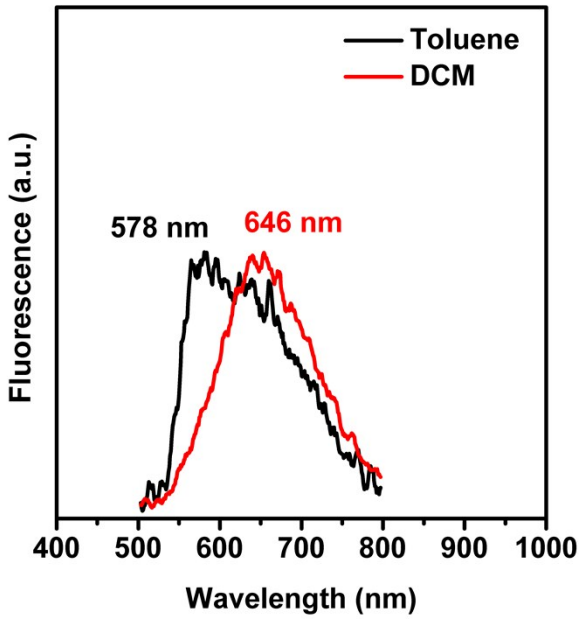

Figure S8. Fluorescence emission spectra of **BDY-PhAc-BDY** in dichloromethane (DCM) and toluene solutions ($1x10^{-5}$ M) (Excitation wavelength= 510 nm).

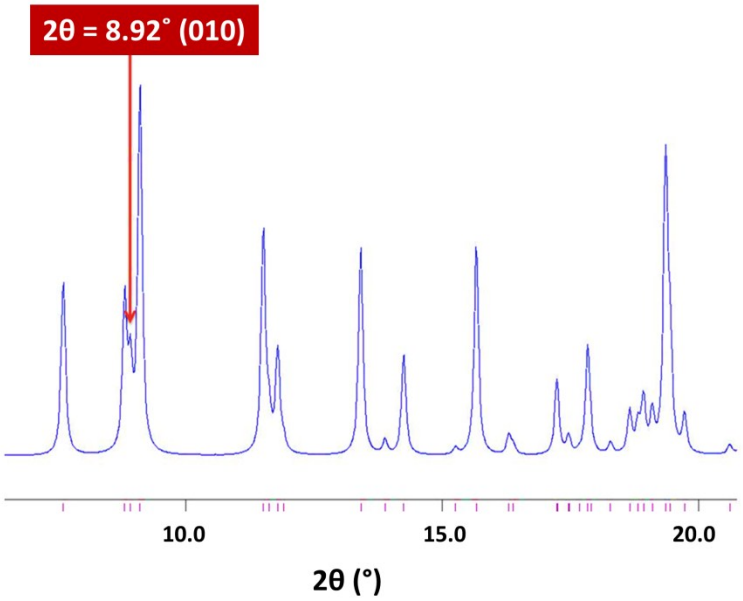

Figure S9. Simulated XRD powder pattern of **BDY-PhAc-BDY** with the selected matching peak at 2θ = 8.92˚ corresponding to (010) diffraction plane.

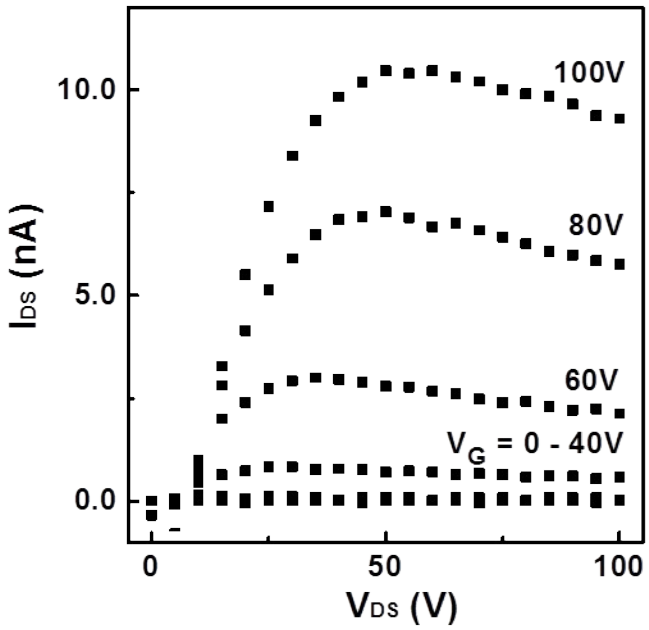

Figure S10. Representative output plot for the OFET devices fabricated with solution-sheared **BDY-PhAc-BDY** thin-film.

X-ray data collection and structure refinement

Single crystal x-ray diffraction analysis was carried out on an Bruker APEX II QUAZAR three-circle diffractometer using monochromatized Mo Kα X-radiation (λ = 0.71073 Å) using φ and ω technique at 173(2) K. Indexing was performed using APEX2.[1] Data integration and reduction were carried out with SAINT V8.34A.[2] Absorption correction was performed by multi-scan method implemented in SADABS V2014/5.[3] Space groups were determined using XPREP implemented in APEX2. The structure was solved using in SIR-92.[4] The least-square refinement on F^2 was achieved with the CRYSTALS software.[5] All non-hydrogen atoms were refined anisotropically. The hydrogen atoms were all located in a difference map, but those attached to carbon atoms were repositioned geometrically. The H atoms were initially refined with soft restraints on the bond lengths and angles to regularize their geometry (C---H in the range 0.93--0.98 Å) and Uiso(H) (in the range 1.2-1.5 times Ueq of the parent atom), after which the positions were refined with riding constraints. The crystals available for X-ray structural analysis were of quite poor quality and weak scatterers at high resolution (≈1.00 Å), thus resulting in comparatively high *R*/*wR* values. A crystallographic data and refinement detail of the data collection for BDY-PhAc-BDY is given in Table 1. The final geometrical calculations and the molecular drawings were carried out with PLATON program.[6]

Table S1. Crystal data and refinement parameters for **BDY-PhAc-BDY**.

Crystal parameters	BDY-PhAc-BDY
CCDC	1482958
Empirical Formula	$C_{56}H_{60}B_2F_4N_4O_2S_2$
Formula weight (g. mol^{-1})	982.86
Temperature (K)	173(2)
Wavelength (Å)	0.71073
Crystal system	Triclinic
Space group	*P*-1

***a* (Å)**	10.1366 (12)
***b* (Å)**	10.9280 (12)
***c* (Å)**	12.6758 (14)
α(°)	66.265 (7)
β(°)	87.951 (7)
γ(°)	81.738 (7)
Crystal size (mm)	0.46 × 0.44 × 0.08
***V* (Å^3)**	1271.65 (14)
Z	1
ρ_{calcd} (Mg. cm^{-3})	1.283
μ (mm^{-1})	0.17
***F*(000)**	518
θ range for data collection (°)	1.755 - 25.027
h*/*k*/*l	-11/12, -11/13, 0/15
Measured Reflections	11886
Independent reflections (R_{int})	4418 (0.103)
Data/restraints/parameters	2591/36/316
Goodness-of-fit on F^2 (S)	0.95
$R[F^2 > 2s(F^2)]$	0.0860
wR_2 (all data)	0.2139
Largest diff. peak and hole (e.Å^{-3})	1.00 and -0.37

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4. Altomare, A.; Cascarano, G.; Giacovazzo, C.; Guagliardi, A.; Burla, M. C.; Polidori, G.; Camalli, M. J. Appl. Cryst. 1994, 27, 435
5. Betteridge P. W., Carruthers J. R., Cooper R. I., Prout K, Watkin D. J. J. (2003) Appl Cryst 36:1487
6. A. L. Spek, Acta Cryst. 2009, D65, 148-155] and MERCURY [C. F. Macrae, P. R. Edgington, P. McCabe, E. Pidcock, G. P. Shields, R. Taylor, M. Towler, J. van de Streek, J. Appl. Cryst., 2006, 39, 453-457