# Supplementary Material:

# 4,7-Bis(5-(9-hexyl-9*H*-carbazol-3-yl)thiophen-2-yl)-[1,2,5]thiadiazolo[3,4-*d*]pyridazine

**Timofey N. Chmovzh [1,2], Vladislav M. Korshunov,[3] Ilya V. Taydakov,[3] and Oleg A. Rakitin [1,*]**

[1] N. D. Zelinsky Institute of Organic Chemistry Russian Academy of Sciences, 47 Leninsky Prospekt, Moscow, 119991, Russia; orakitin@ioc.ac.ru

[2] Nanotechnology Education and Research Center, South Ural State University, 76 Lenina Avenue, Chelyabinsk, 454080, Russia; tim1661@yandex.ru

[3] P. N. Lebedev Physical Institute of the Russian Academy of Sciences, 53 Leninsky Prospect, 119991 Moscow, Russia; vladkorshunov@bk.ru

* Correspondence: orakitin@ioc.ac.ru; Tel.: +7-499-1355327

**Figure S1.** $^{1}$H NMR spectrum of 4,7-bis(5-bromothiophen-2-yl)-[1,2,5]thiadiazolo[3,4-d]pyridazine **3**.

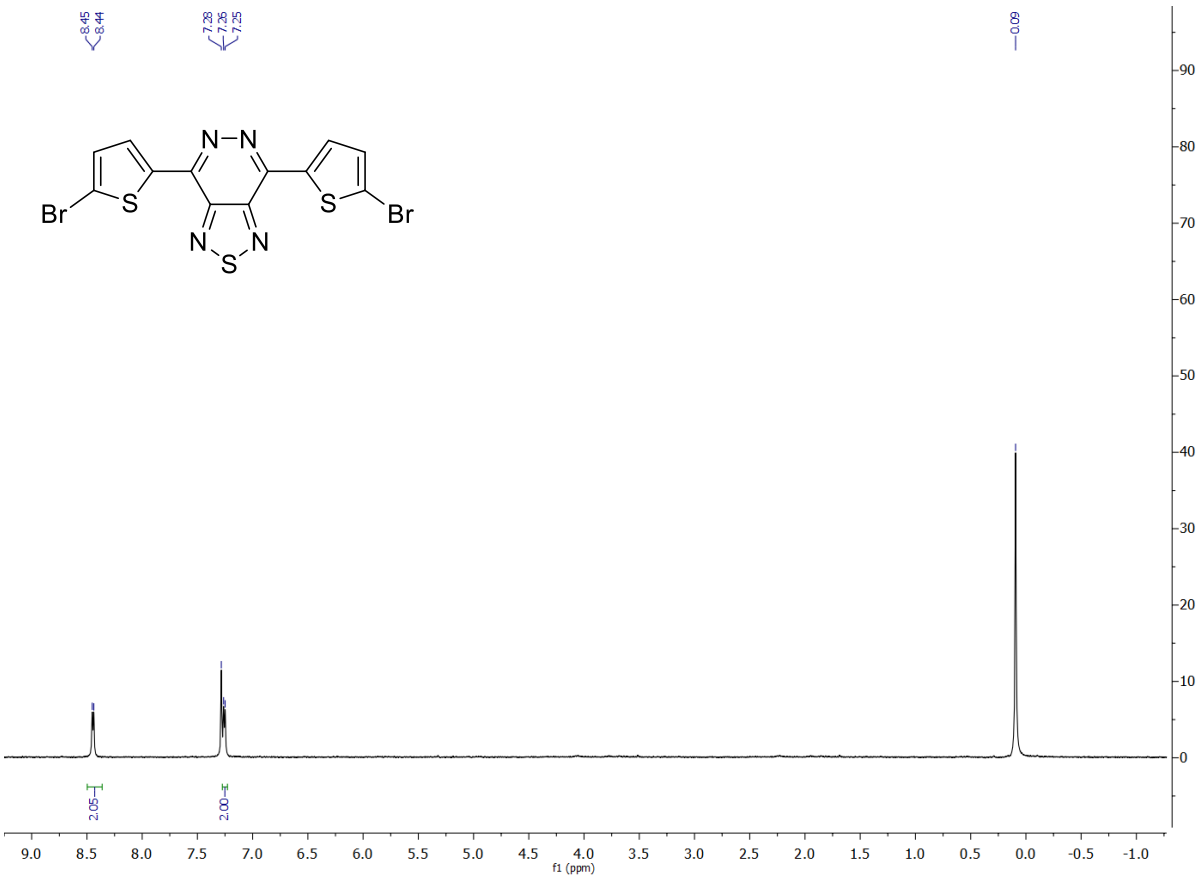

**Figure S2.** $^{13}$C NMR spectrum of 4,7-bis(5-bromothiophen-2-yl)-[1,2,5]thiadiazolo[3,4-d]pyridazine **3**.

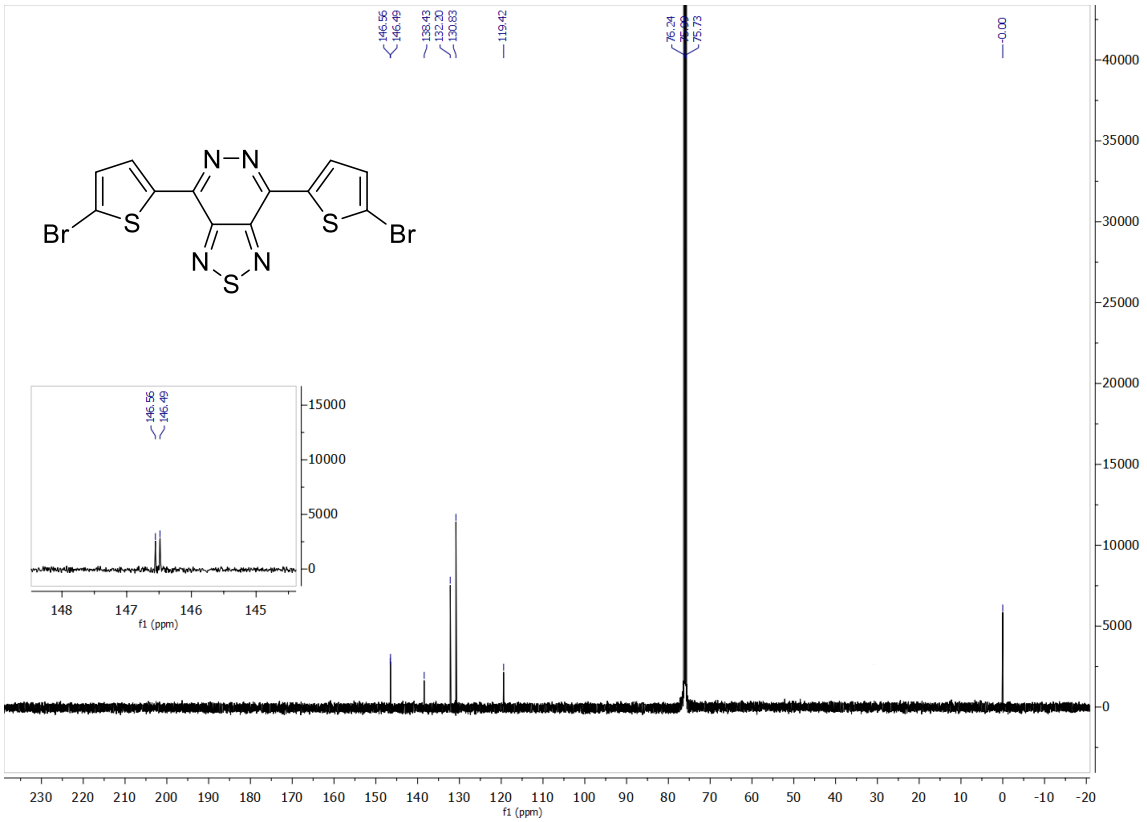

**Figure S3.** IR spectrum of 4,7-bis(1,2,3,4,4a,9a-hexahydro-9*H*-carbazol-9-yl)-[1,2,5]oxadiazolo[3,4-*d*]pyridazine **3**.

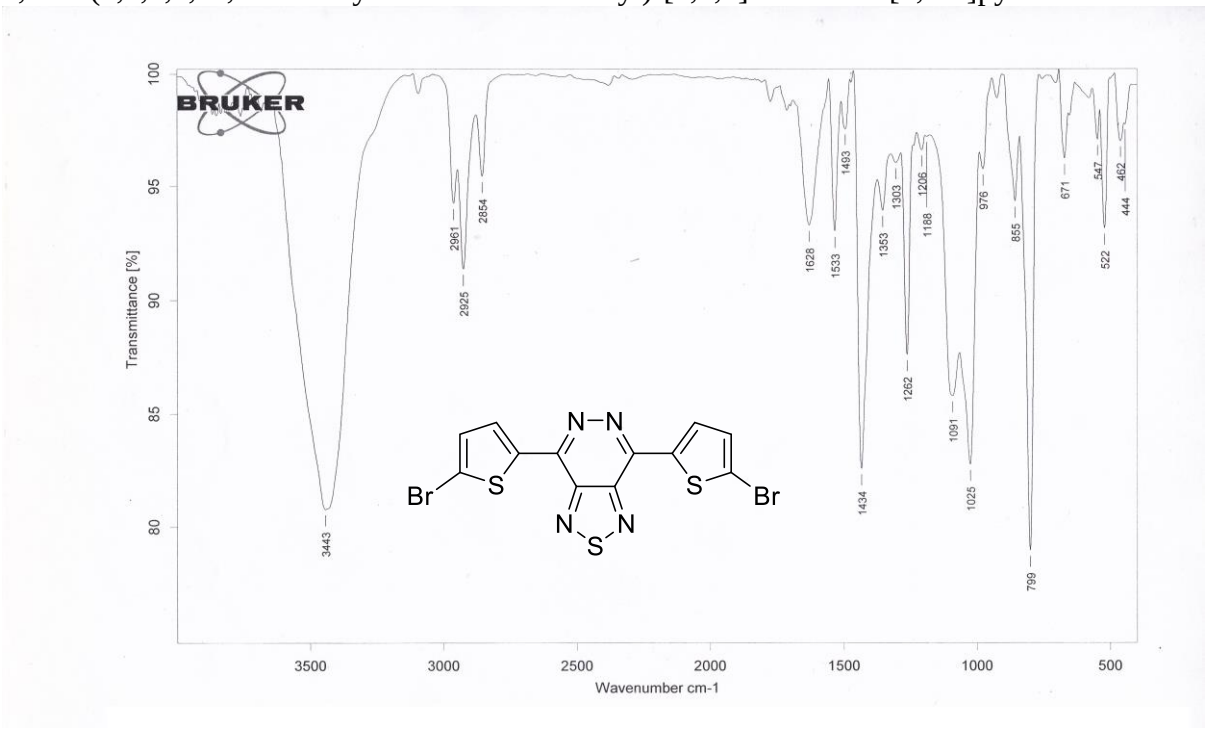

**Figure S4.** HRMS spectrum of 4,7-bis(5-bromothiophen-2-yl)-[1,2,5]thiadiazolo[3,4-d]pyridazine **3**.

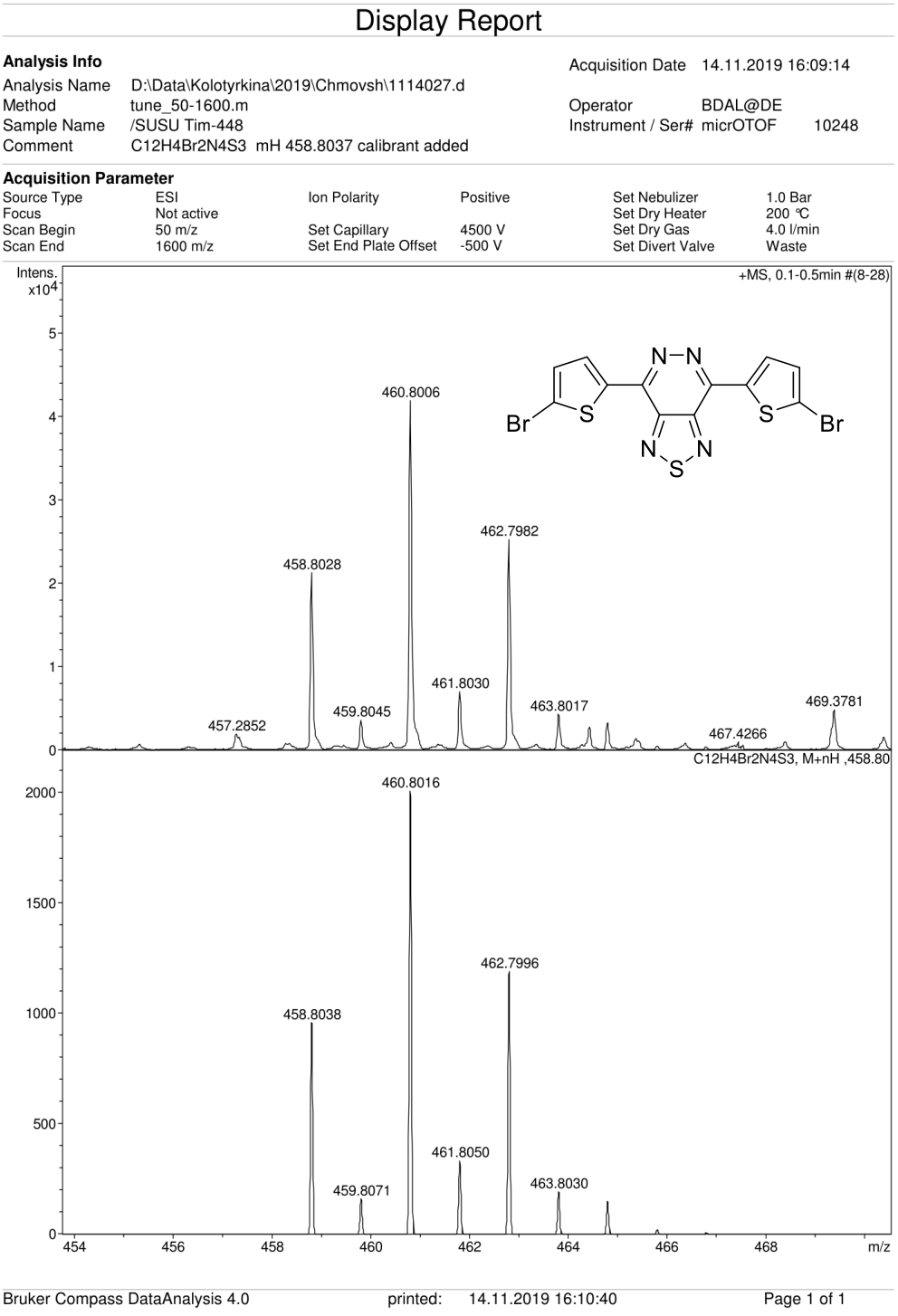

**Figure S5.** $^{1}$H NMR spectrum of 4,7-bis(5-(9-hexyl-9H-carbazol-3-yl)thiophen-2-yl)-[1,2,5]thiadiazolo[3,4-d]pyridazine **1**.

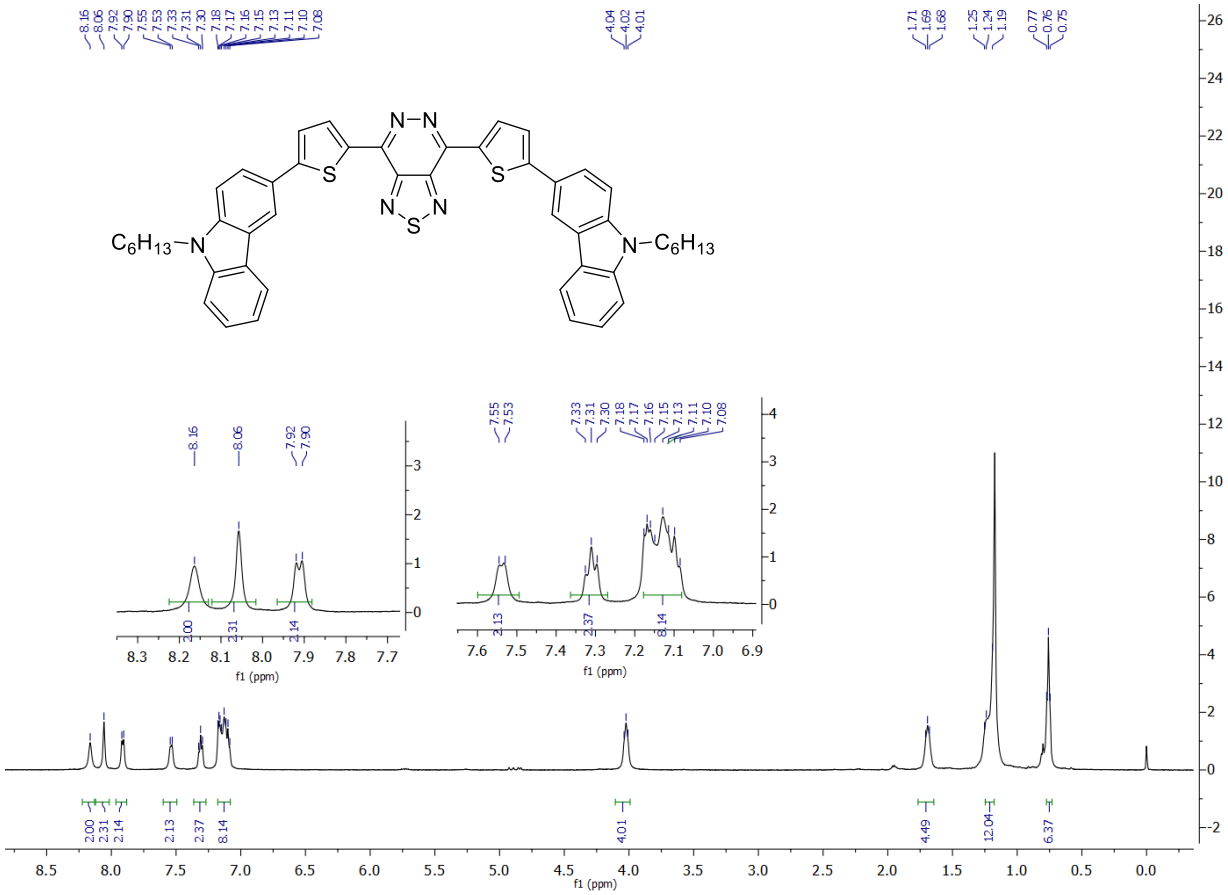

**Figure S6.** $^{13}C$ NMR spectrum of 4,7-bis(5-(9-hexyl-9H-carbazol-3-yl)thiophen-2-yl)-[1,2,5]thiadiazolo[3,4-d]pyridazine **1**.

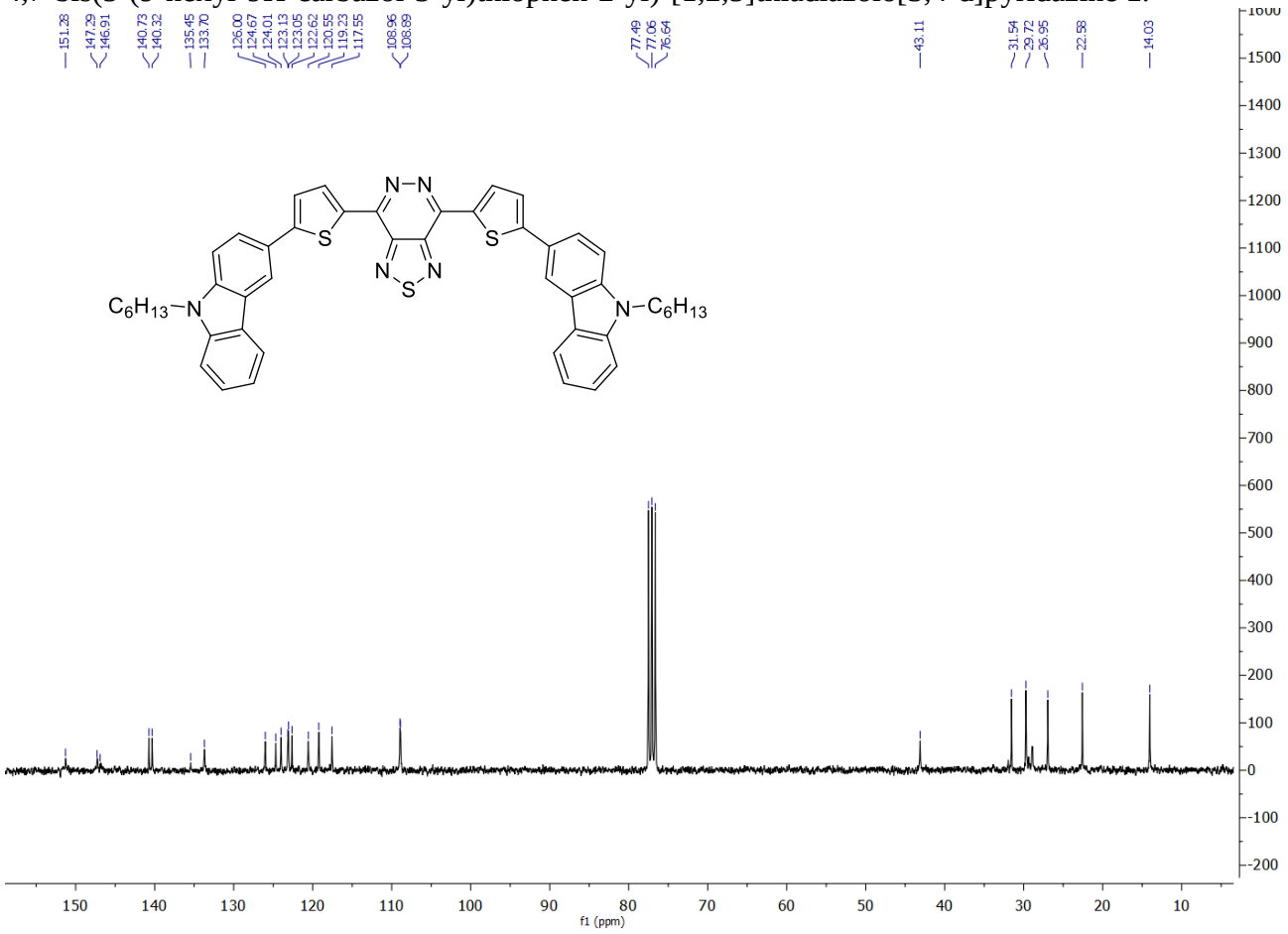

**Figure S7.** IR spectrum of 4,7-bis(5-(9-hexyl-9H-carbazol-3-yl)thiophen-2-yl)-[1,2,5]thiadiazolo[3,4-d]pyridazine **1**.

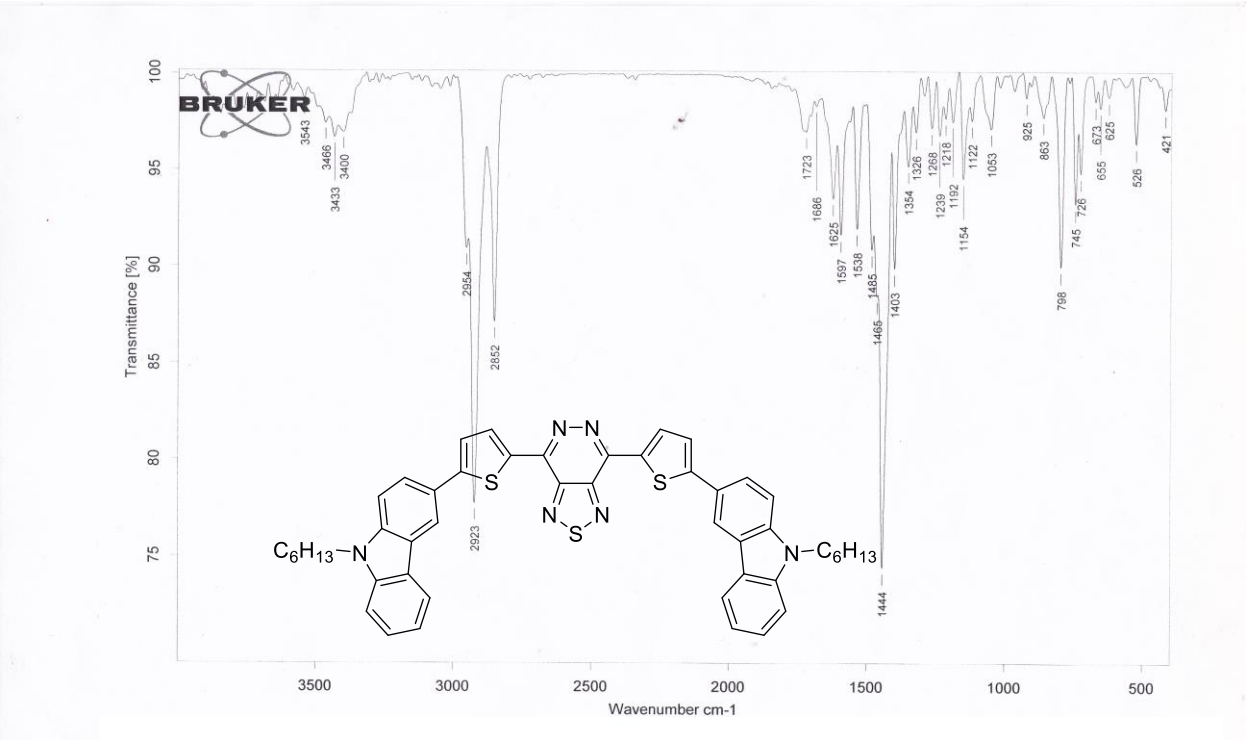

**Figure S8.** HRMS spectrum of 4,7-bis(5-(9-hexyl-9H-carbazol-3-yl)thiophen-2-yl)-[1,2,5]thiadiazolo[3,4-d]pyridazine **1**.

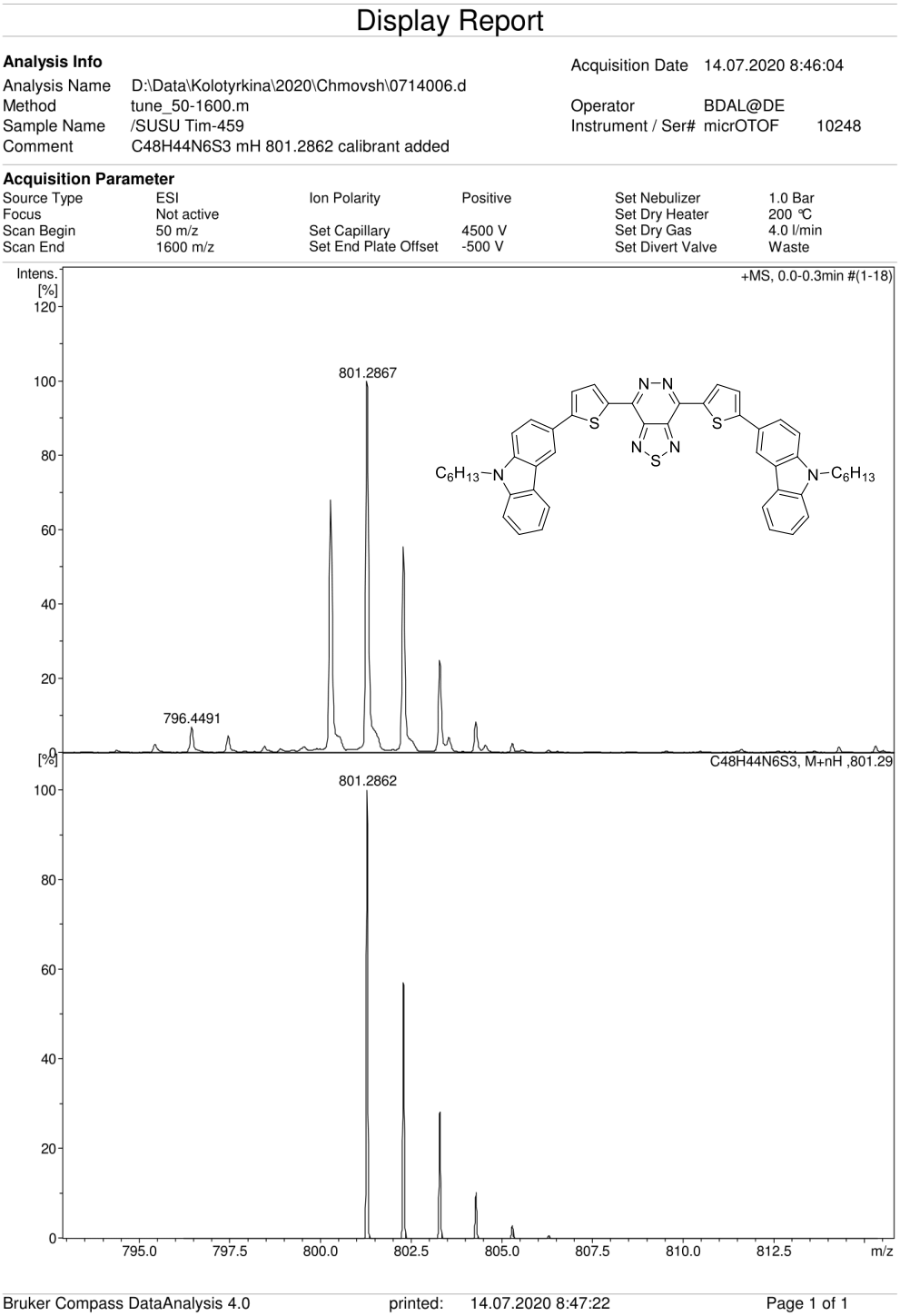

**Figure S9.** UV-Vis spectra recorded for solutions in $CHCl_3$ (Δf=0.149), THF (Δf=0.210) and DMSO (Δf=0.274) of 4,7-bis(5-(9-hexyl-9H-carbazol-3-yl)thiophen-2-yl)-[1,2,5]thiadiazolo[3,4-d]pyridazine **1**.

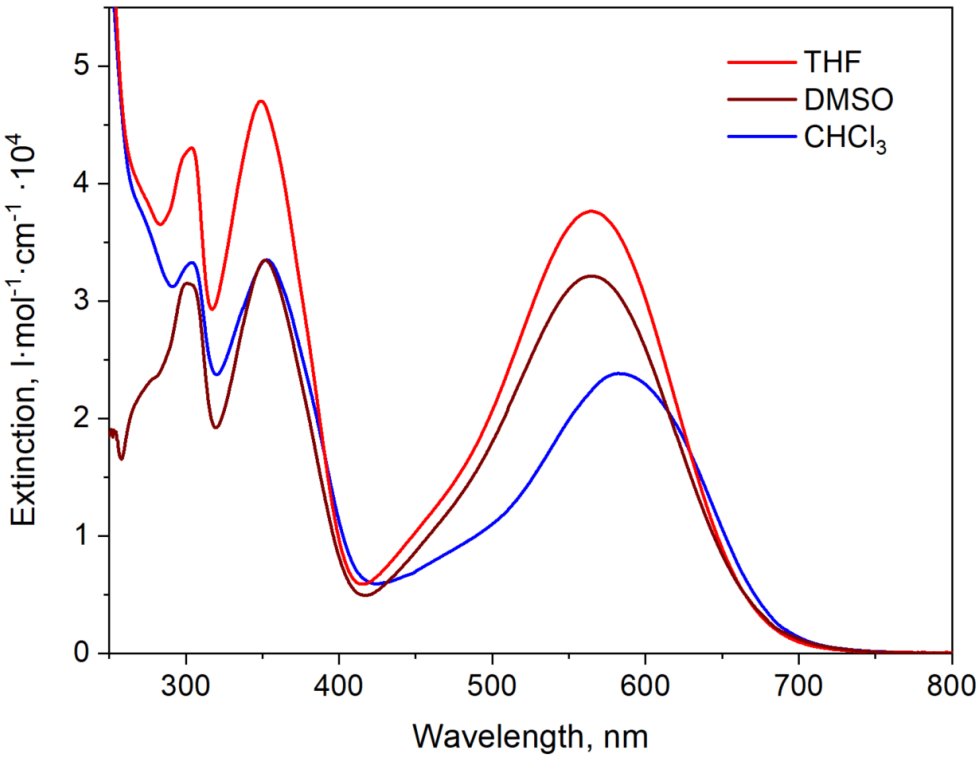

**Figure S10.** PL spectra obtained for solutions in $CHCl_3$ (Δf=0.149), THF (Δf=0.210) and DMSO (Δf=0.274) under CW optical excitation at 500 nm of 4,7-bis(5-(9-hexyl-9H-carbazol-3-yl)thiophen-2-yl)-[1,2,5]thiadiazolo[3,4-d]pyridazine **1**.