Supporting Information

Synthesis, Characterization, and Hole-transporting Properties of Benzotriazatruxene Derivatives

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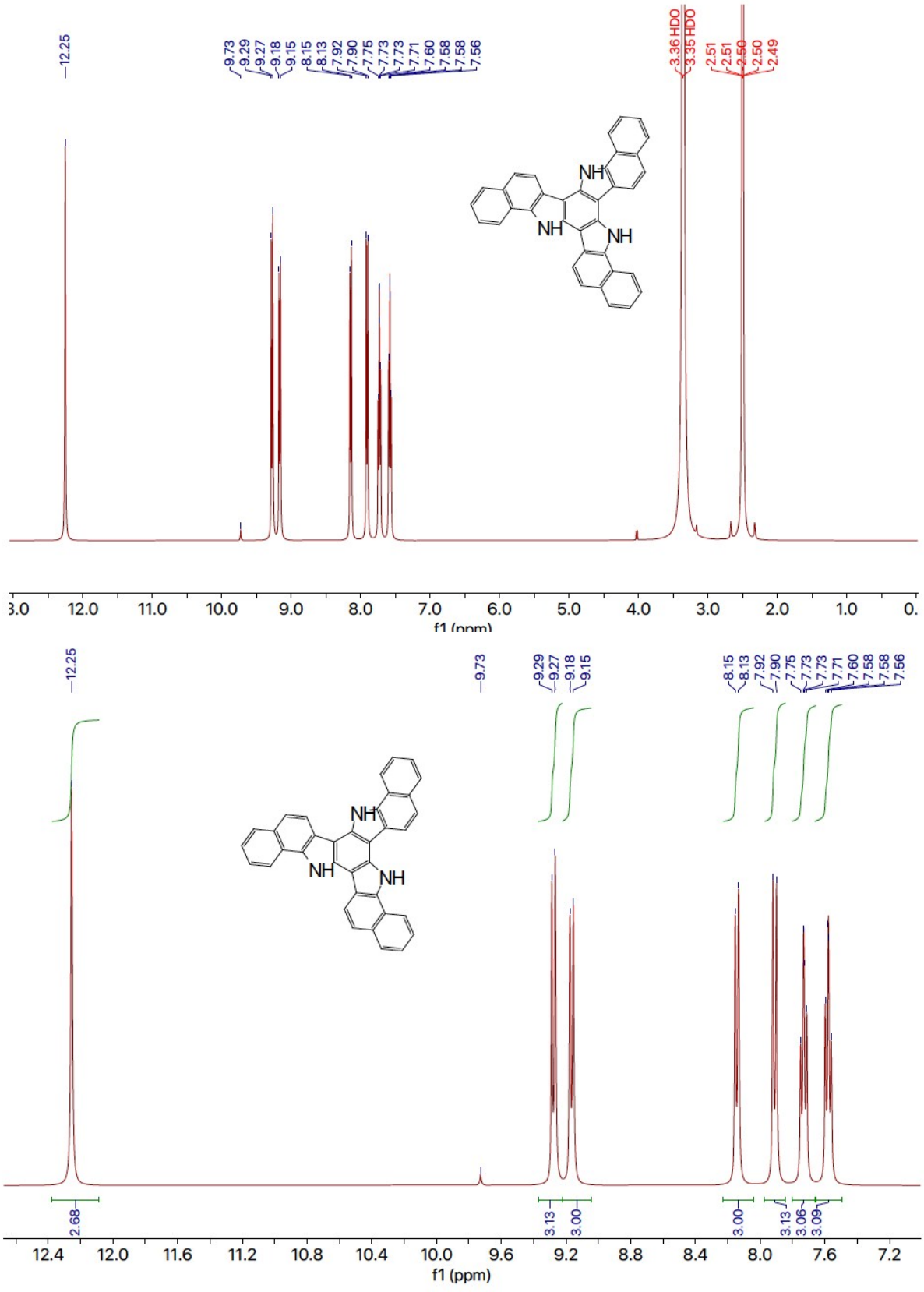

Figure S1. [1]H-NMR spectrum of 12,19-dihydro-5*H*-benzo[*i*]benzo[6,7]indolo[3,2-*a*]benzo[6,7]indolo[3,2-*c*]carbazole (**S-BTT**) in deuterated DMSO.

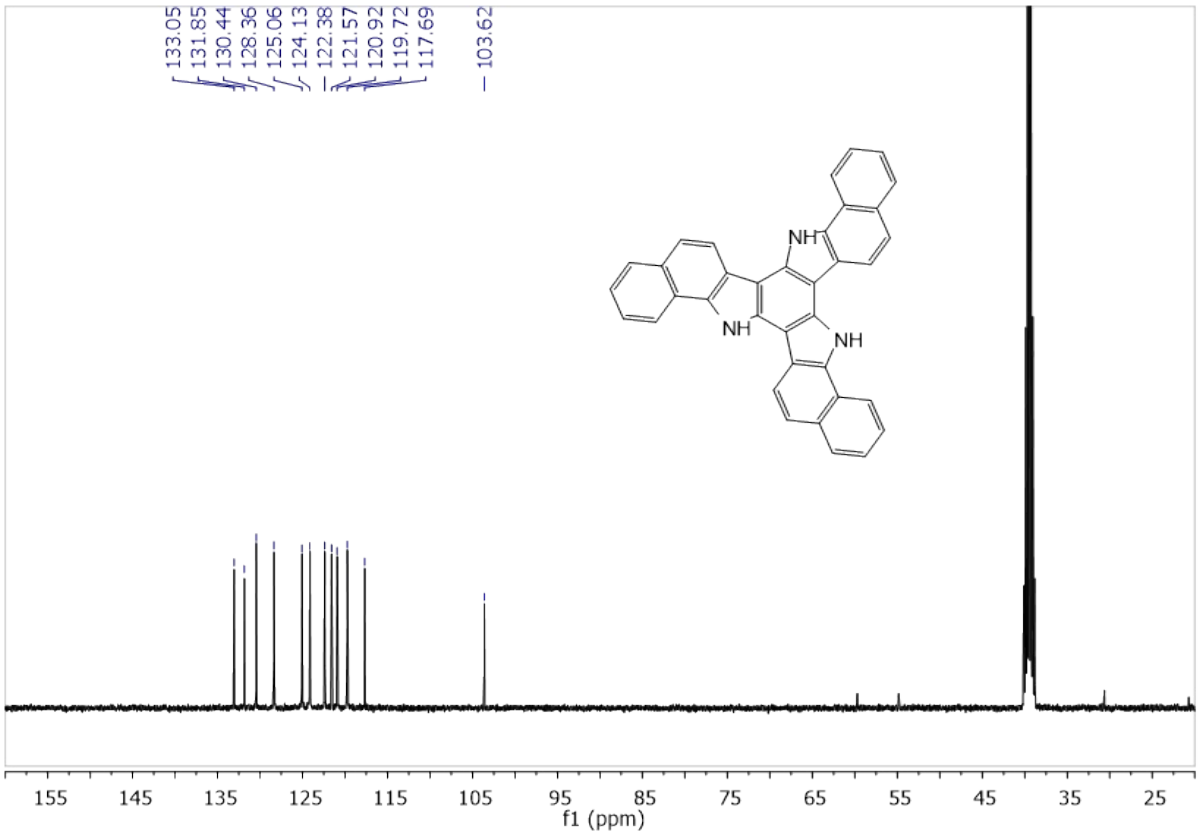

Figure S2. ^{13}C-NMR spectrum of 12,19-dihydro-5*H*-benzo[*i*]benzo[6,7]indolo[3,2-*a*]benzo[6,7]indolo[3,2-*c*]carbazole (**S-BTT**) in deuterated DMSO.

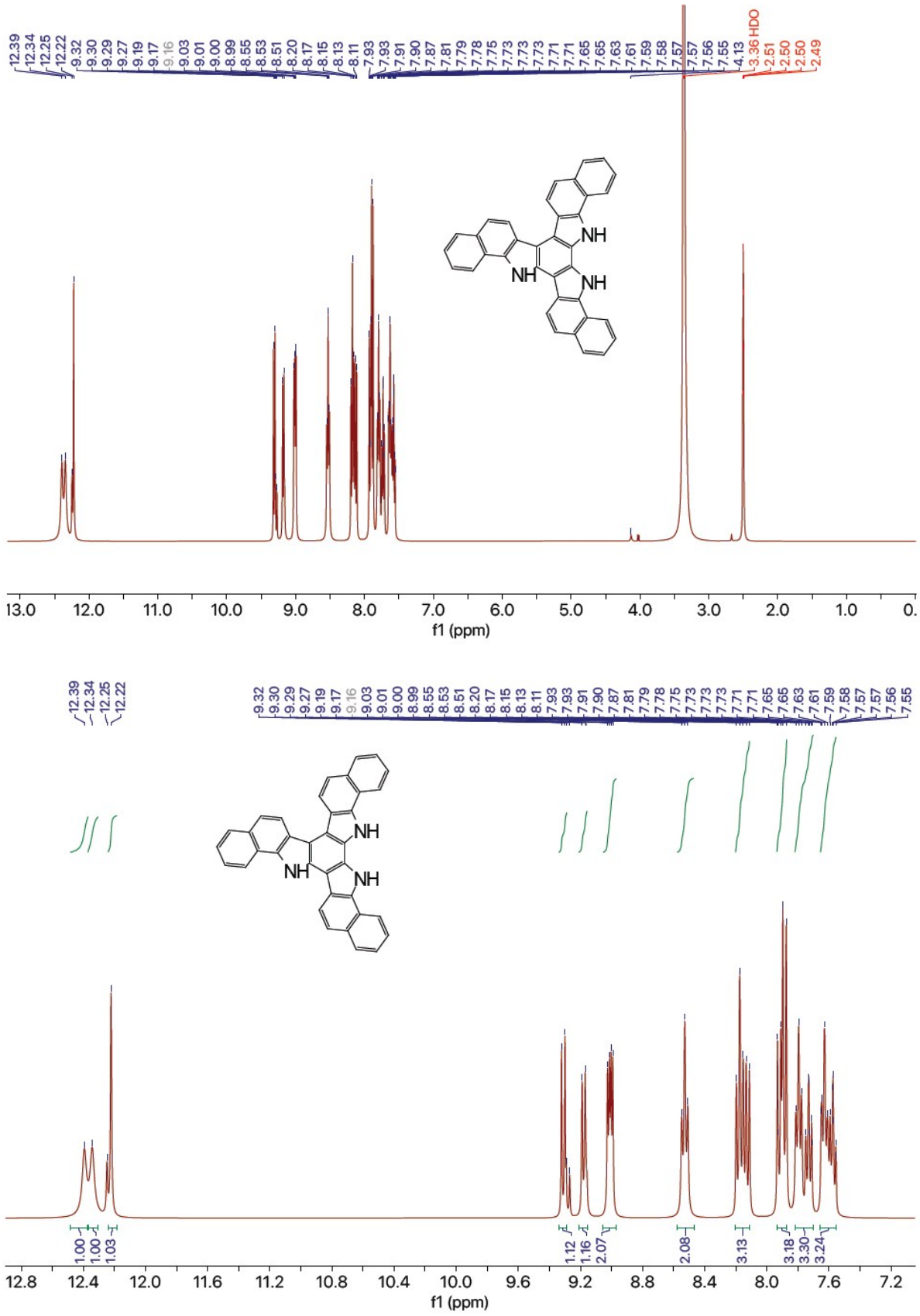

Figure S3 ^{1}H-NMR spectrum of 6,13-dihydro-5*H*-benzo[*i*]benzo[6,7]indolo[2,3-*a*]benzo[6,7]indolo[2,3-*c*]carbazole (**A-BTT**) in deuterated DMSO.

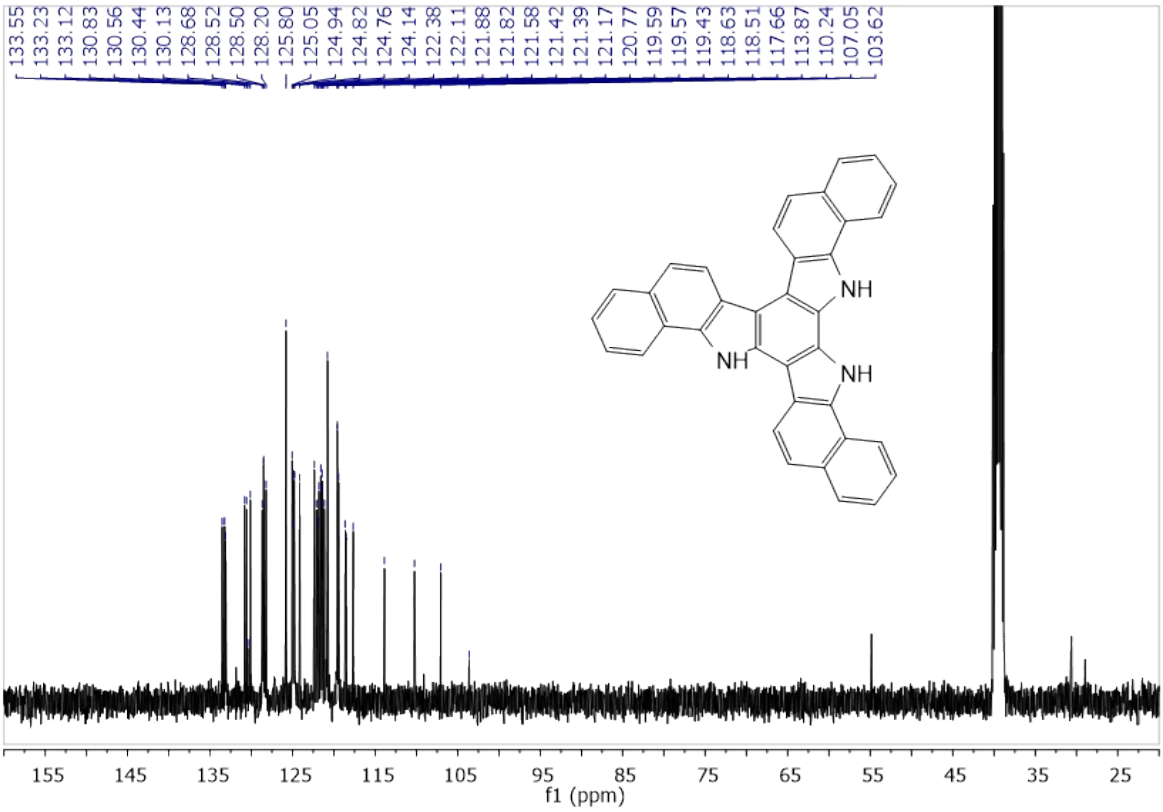

Figure S4. ^{13}C-NMR spectrum of 6,13-dihydro-5*H*-benzo[*i*]benzo[6,7]indolo[2,3-*a*]benzo[6,7]indolo[2,3-*c*]carbazole (**A-BTT**) in deuterated DMSO.

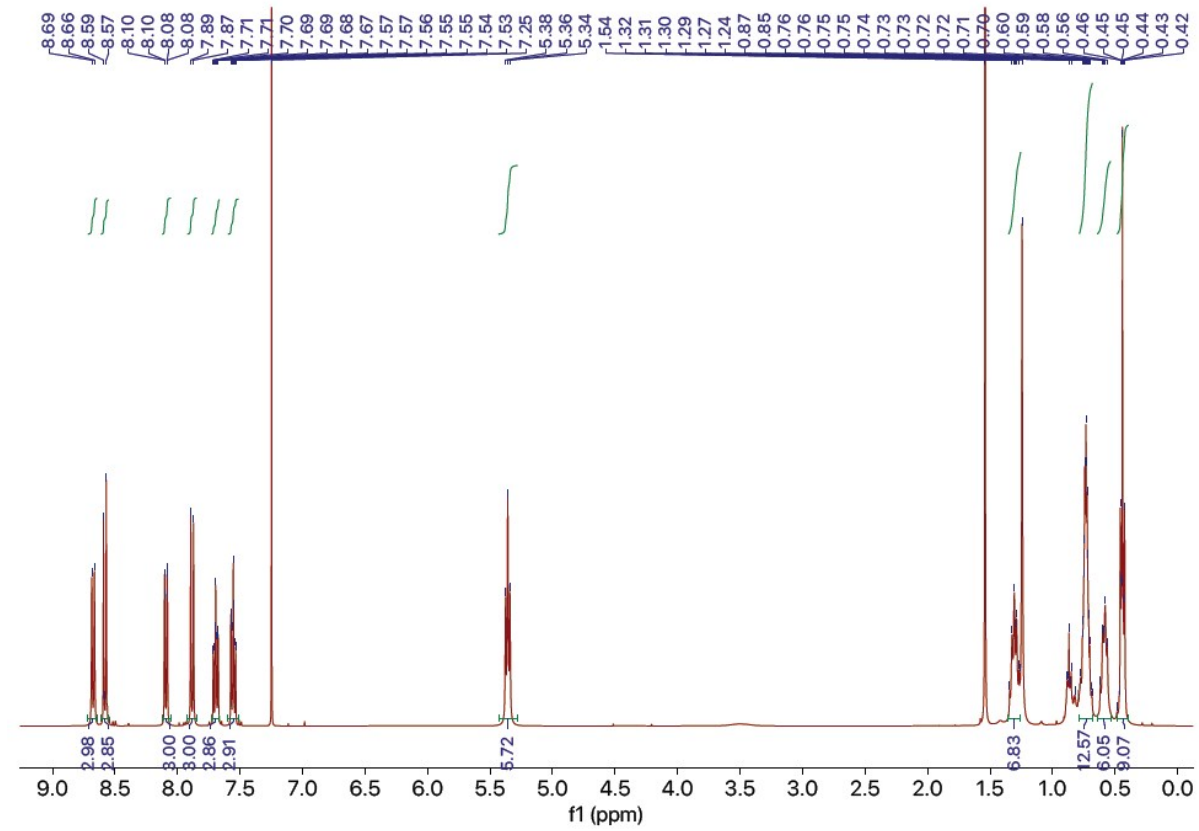

Figure S5. ^{1}H-NMR spectrum of 5,12,19-trihexyl-12,19-dihydro-5*H*-benzo[*i*]benzo[6,7]indolo[3,2-*a*]benzo[6,7]indolo[3,2-*c*]carbazole **(S-BTT-C6)** in $CDCl_3$.

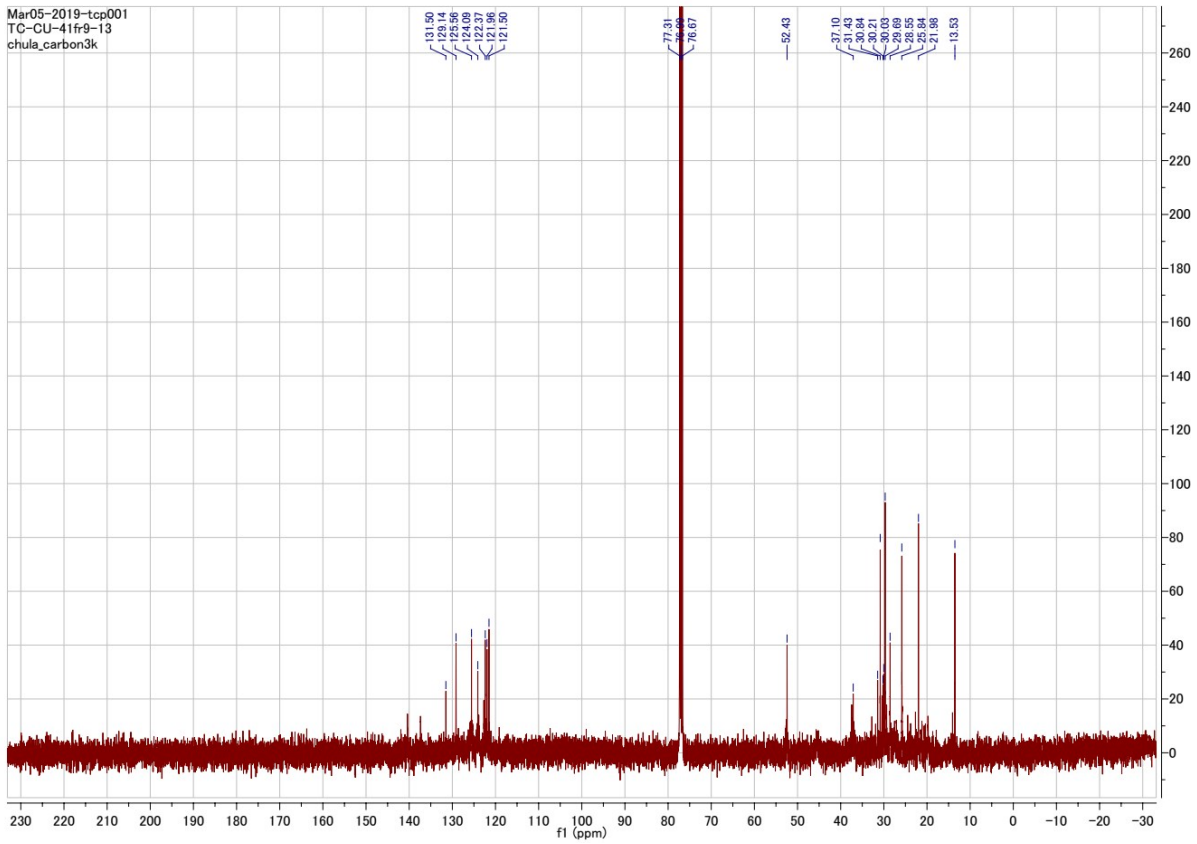

Figure S6. ^{13}C-NMR spectrum of 5,12,19-trihexyl-12,19-dihydro-5*H*-benzo[*i*]benzo[6,7]indolo[3,2-*a*]benzo[6,7]indolo[3,2-*c*]carbazole **(S-BTT-C6)** in $CDCl_3$.

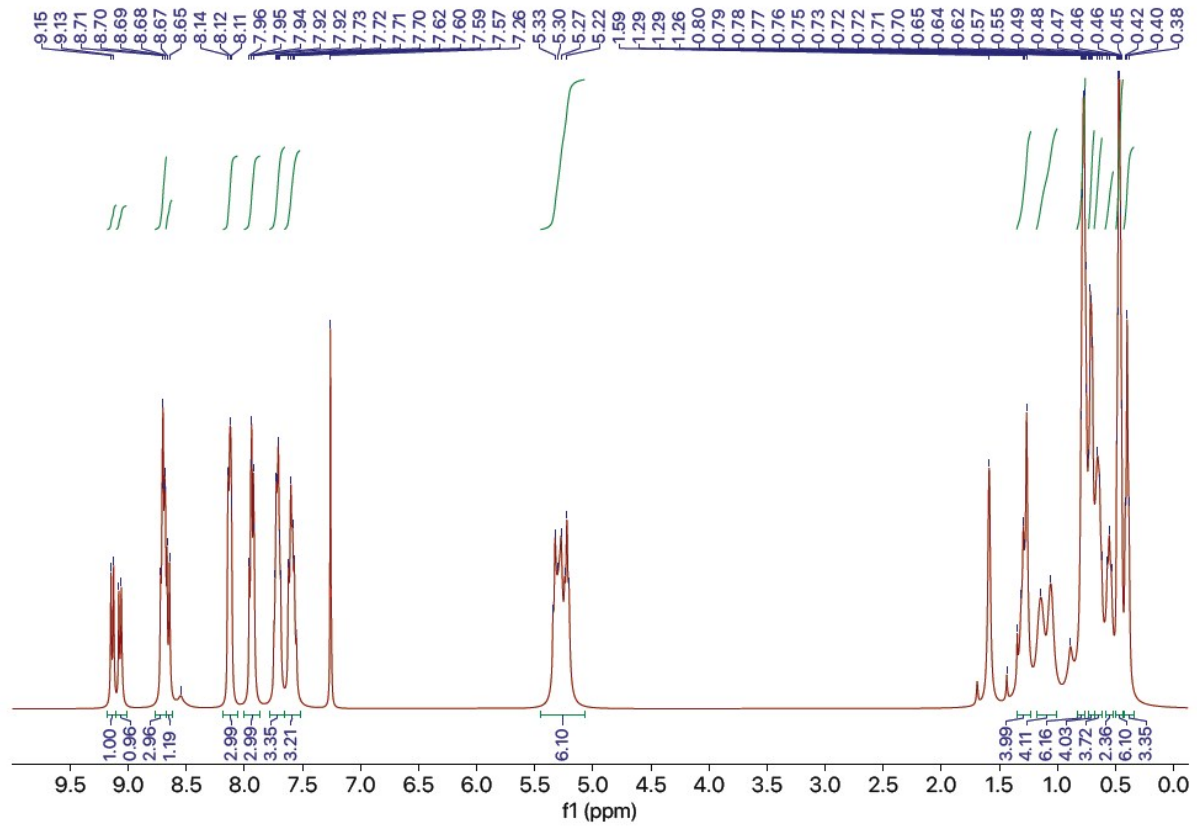

Figure S7. ^{1}H-NMR spectrum of 5,6,13-trihexyl-6,13-dihydro-5*H*-benzo[*i*]benzo[6,7]indolo[2,3-*a*]benzo[6,7]indolo[2,3-*c*]carbazole **(A-BTT-C6)** in $CDCl_3$.

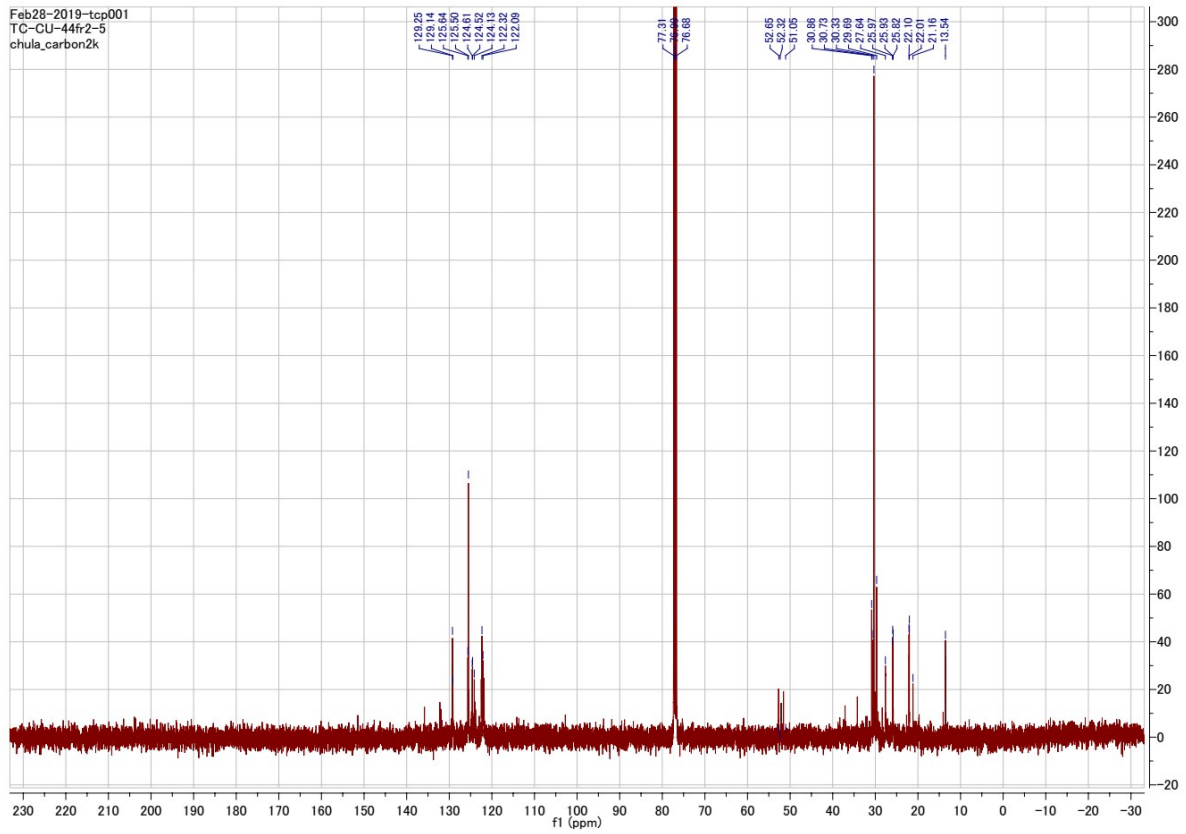

Figure S8. ^{13}C-NMR spectrum of 5,6,13-trihexyl-6,13-dihydro-5*H*-benzo[*i*]benzo[6,7]indolo[2,3-*a*]benzo[6,7]indolo[2,3-*c*]carbazole **(A-BTT-C6)** in $CDCl_3$.

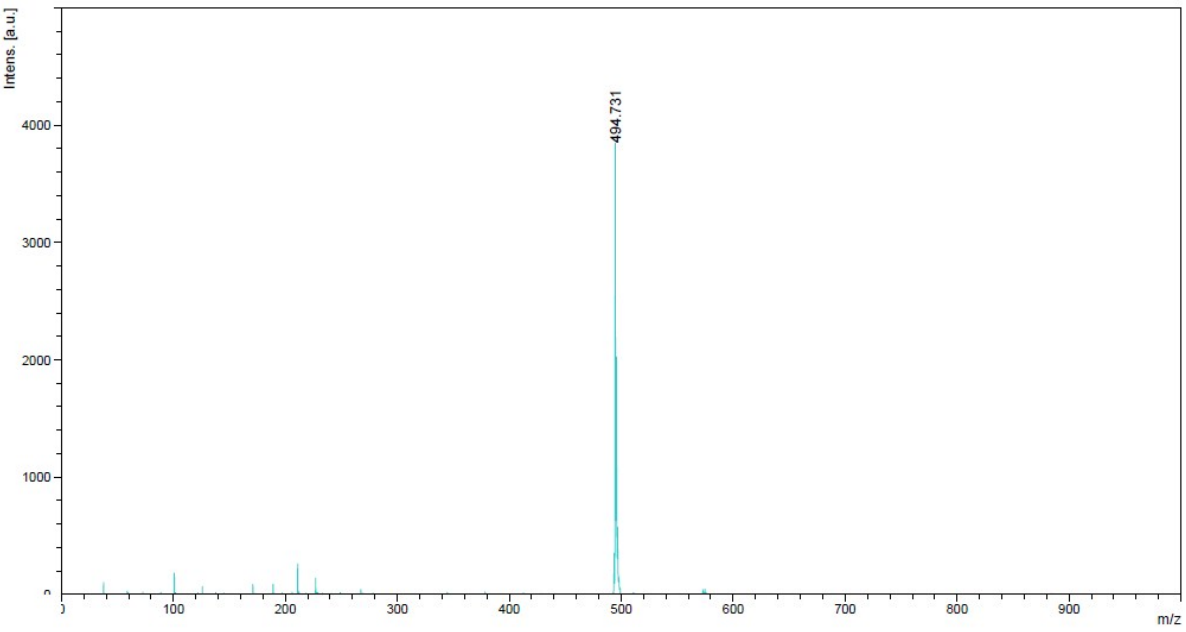

Figure S9. MALDI-ToF spectrum of 12,19-dihydro-5*H*-benzo[*i*]benzo[6,7]indolo[3,2-*a*]benzo[6,7]indolo[3,2-*c*]carbazole **(S-BTT)**

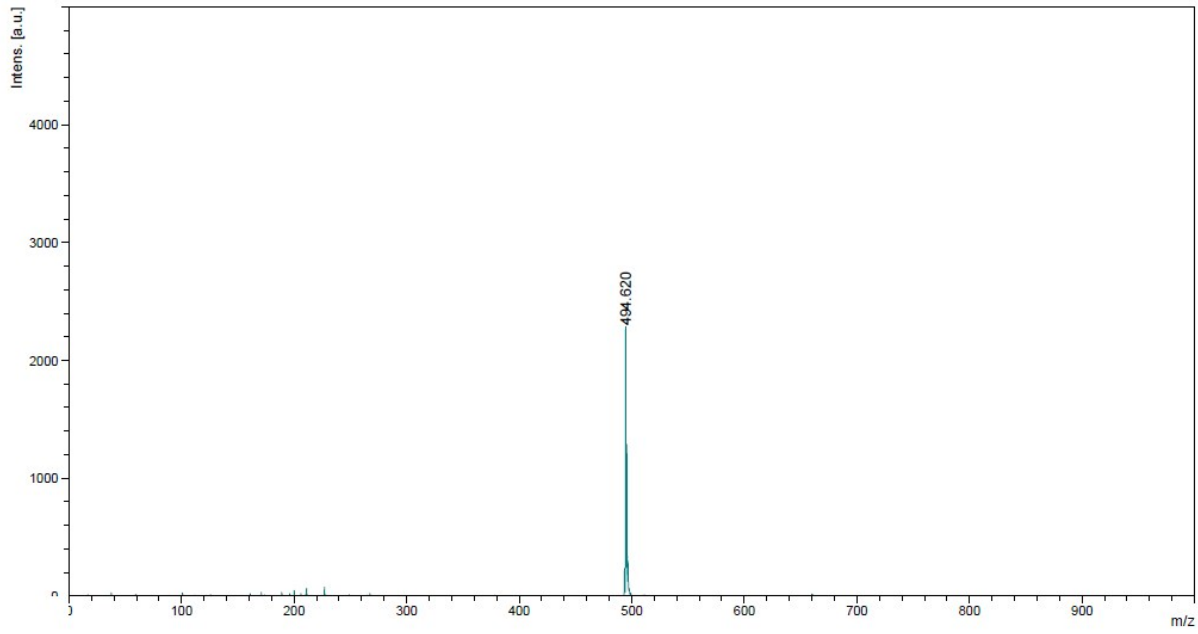

Figure S10. MALDI-ToF spectrum of 6,13-dihydro-5*H*-benzo[*i*]benzo[6,7]indolo[2,3-*a*]benzo[6,7]indolo[2,3-*c*]carbazole **(A-BTT)**

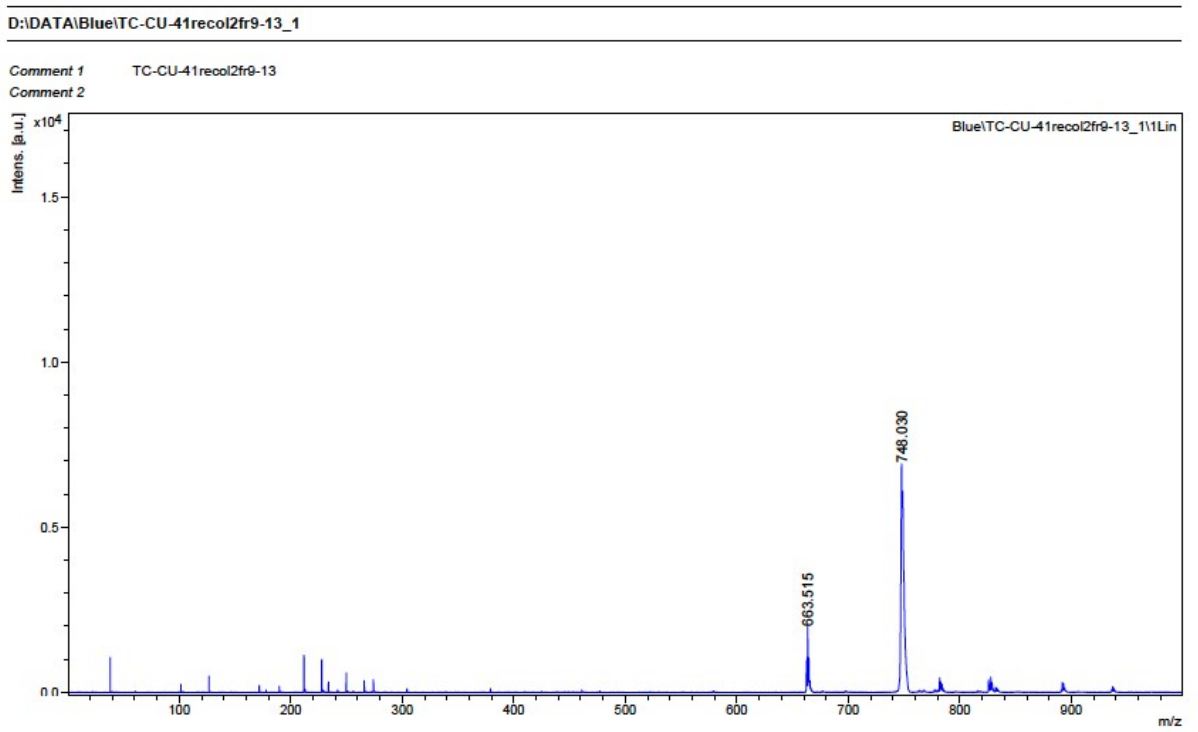

Figure S11. MALDI-ToF spectrum of 5,12,19-trihexyl-12,19-dihydro-5*H*-benzo[*i*]benzo[6,7]indolo[3,2-*a*]benzo[6,7]indolo[3,2-*c*]carbazole **(S-BTT-C6)**

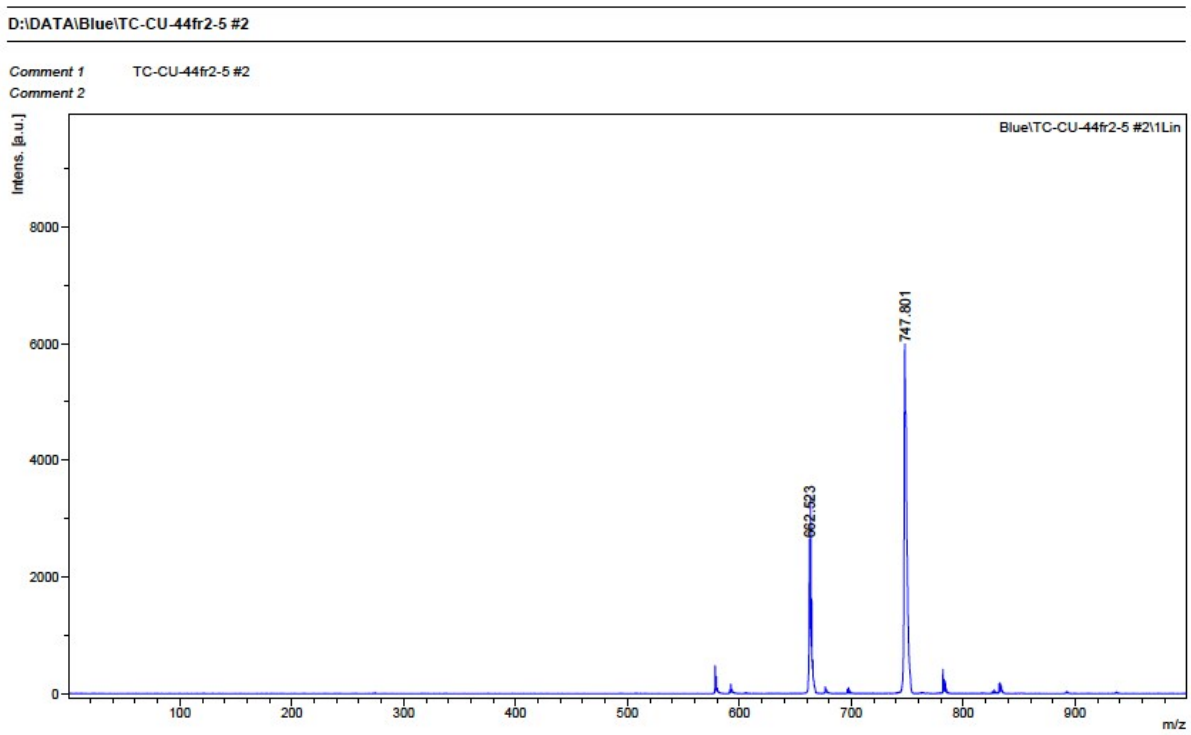

Figure S12. MALDI-ToF spectrum of 5,6,13-trihexyl-6,13-dihydro-5*H*-benzo[*i*]benzo[6,7]indolo[2,3-*a*]benzo[6,7]indolo[2,3-*c*]carbazole **(A-BTT-C6)**

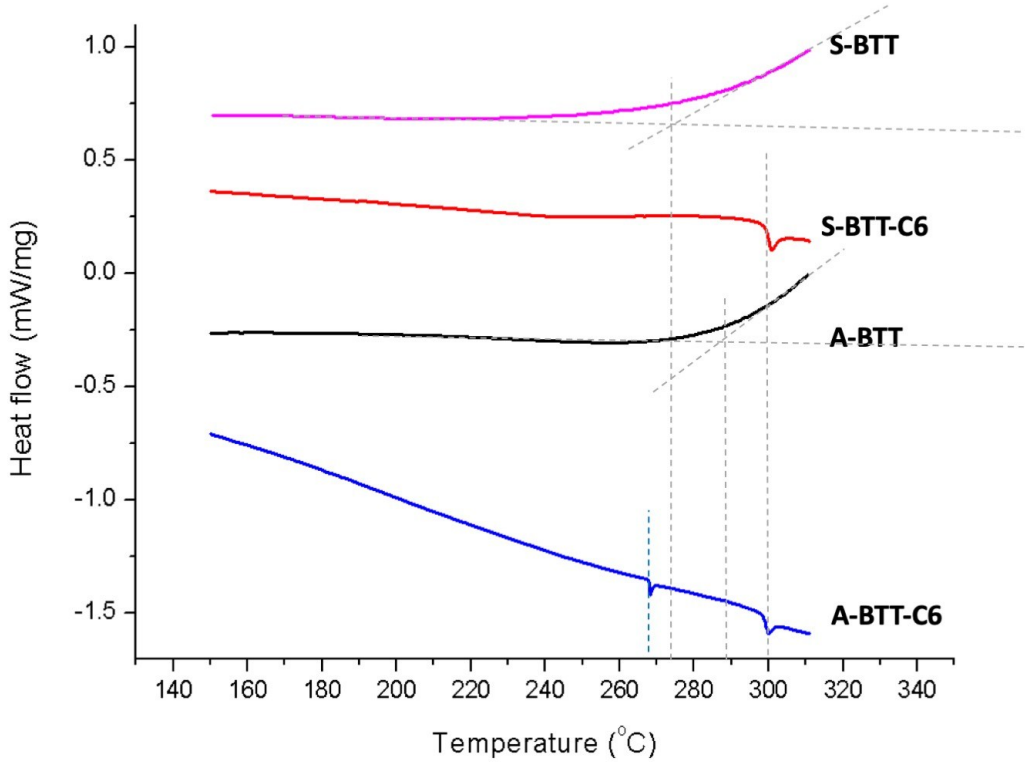

Figure S13 DSC thermograms of **S-BTT, A-BTT, S-BTT-C6** and **A-BTT-C6**

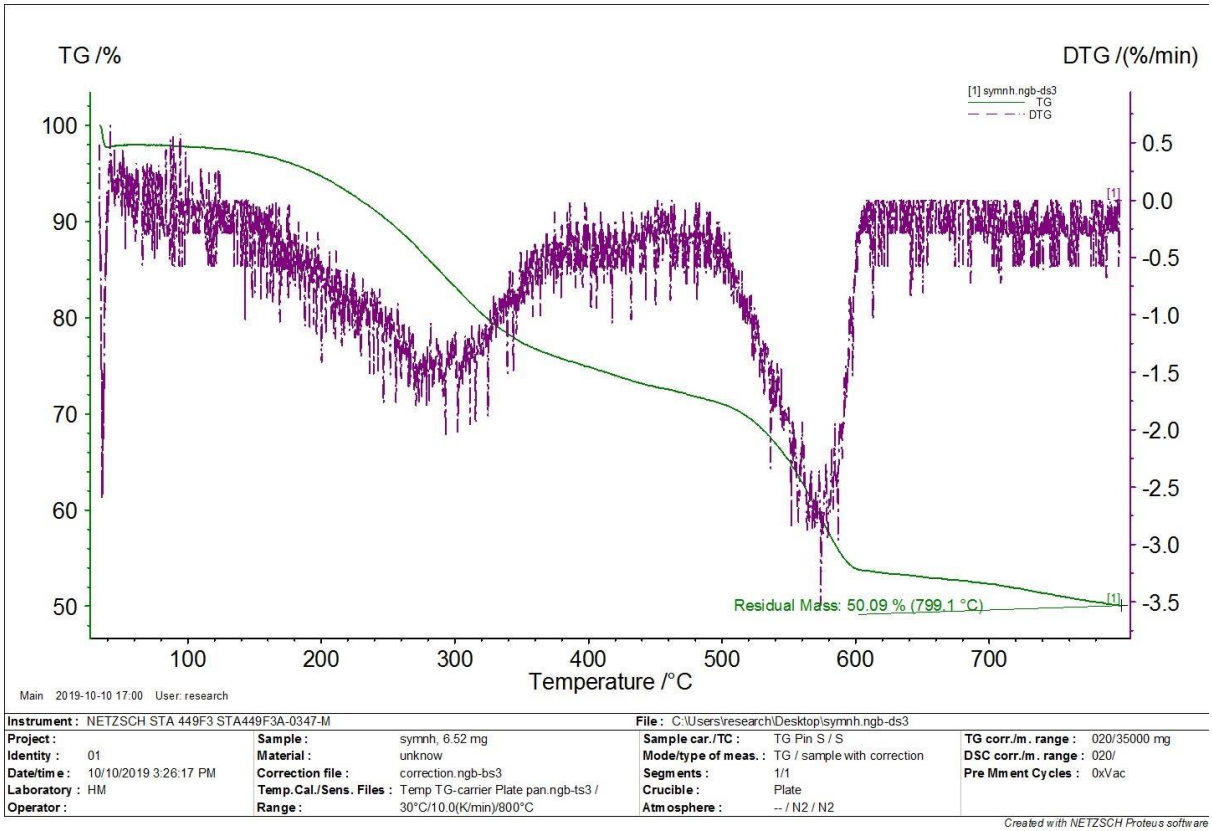

Figure S14 TGA thermogram of **S-BTT**

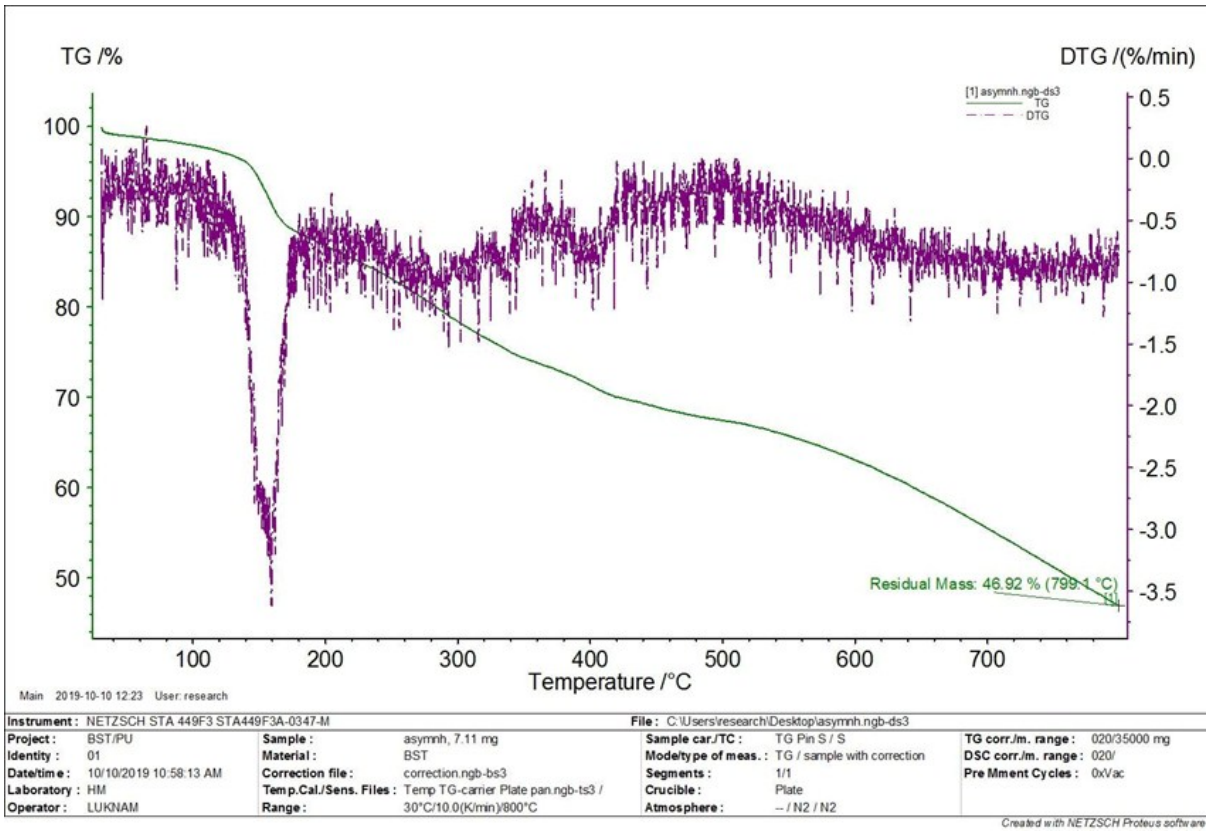

Figure S15 TGA thermogram of **A-BTT**

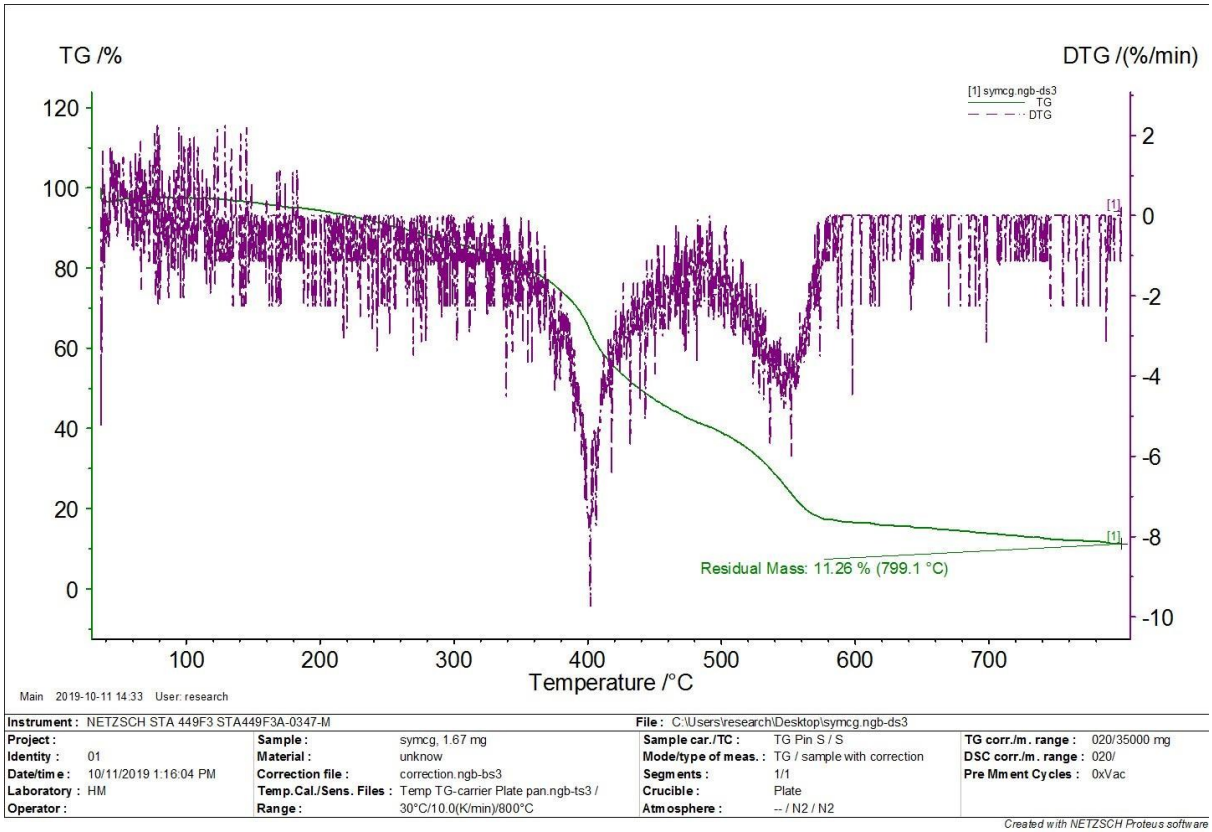

Figure S16 TGA thermogram of **S-BTT-C6**

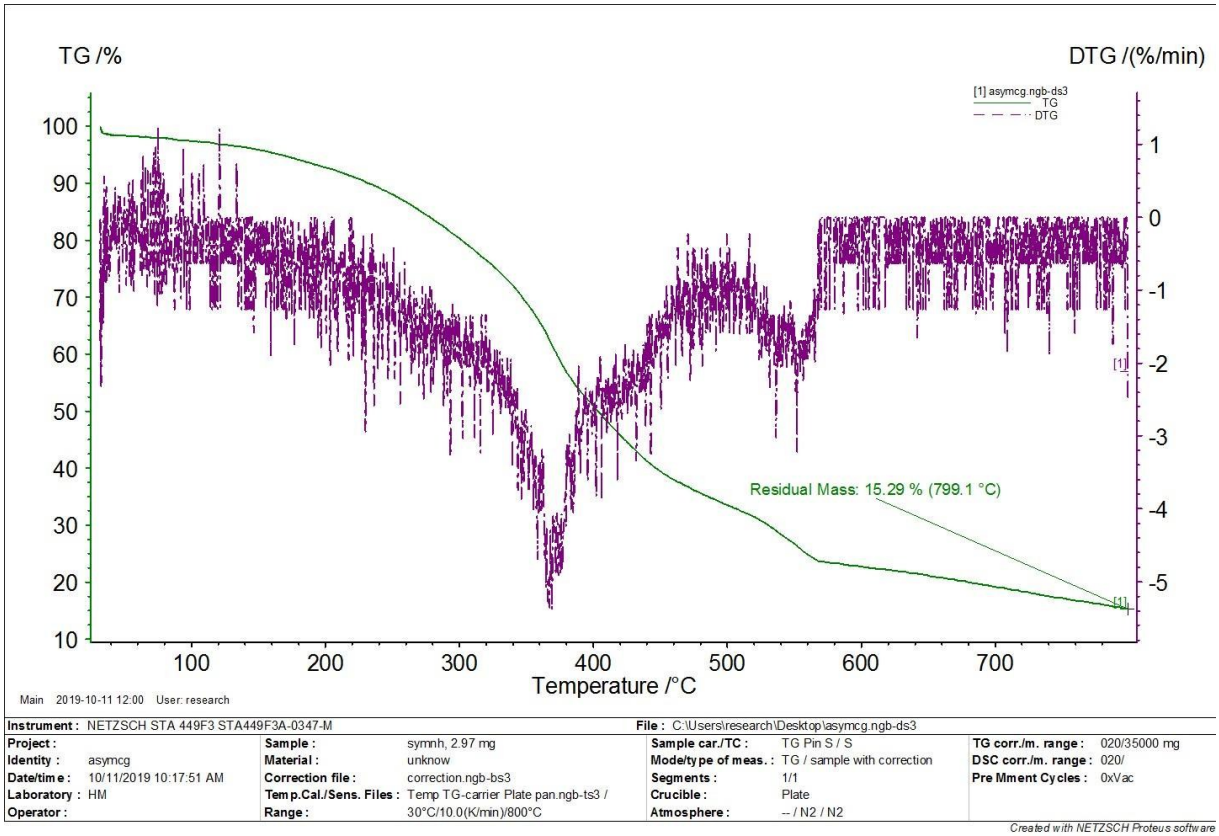

Figure S17 TGA thermogram of **A-BTT-C6**