Supplementary Information

Tetraphenylethene- or diphenyldibenzofulvene-anthracene-based fluorescence sensor possessing photo-induced electron transfer and aggregation-induced emission enhancement characteristics for detection of water

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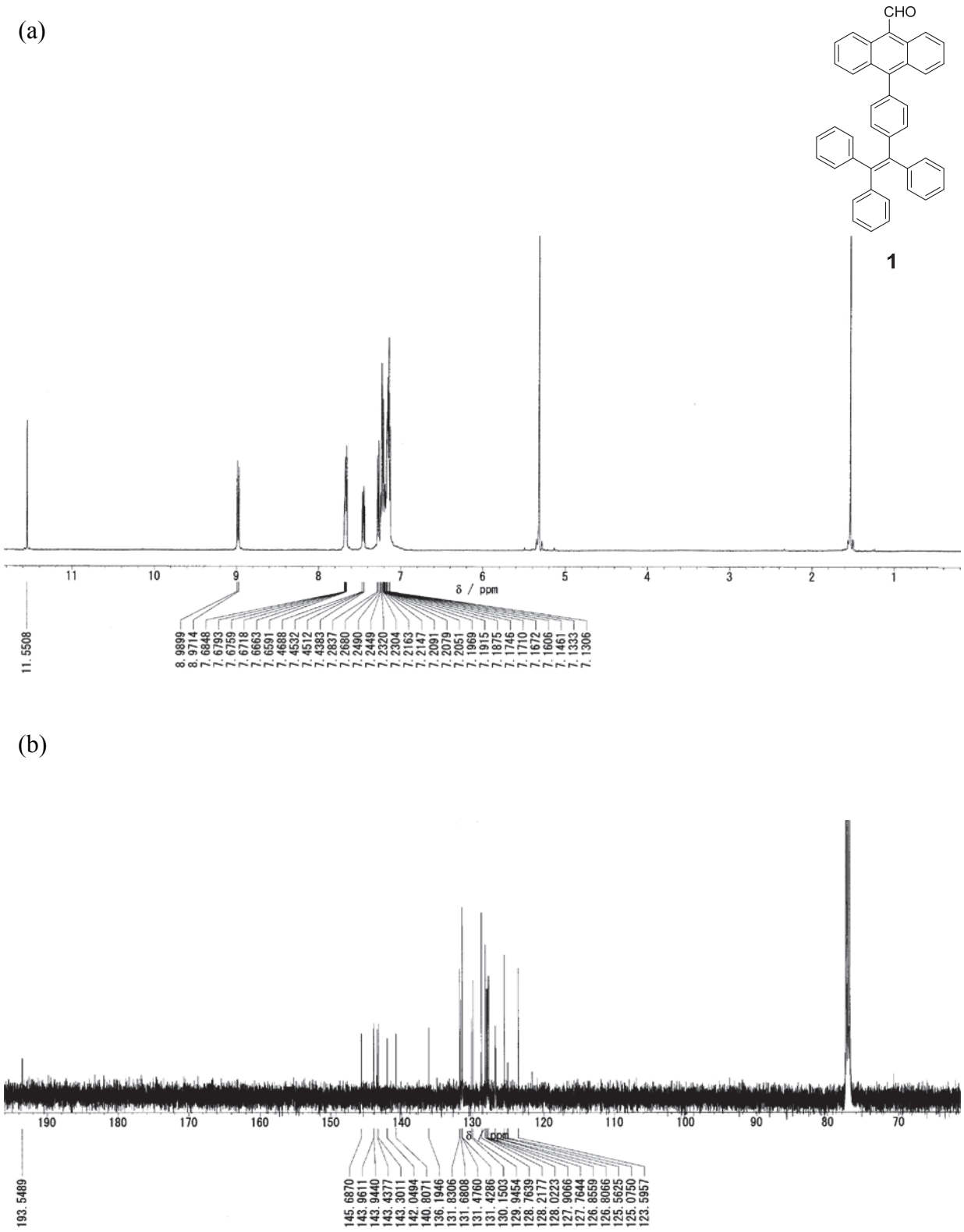

Fig. S1 (a) ^{1}H HMR (500 MHz) of **1** in CD_2Cl_2 and (b) ^{13}C HMR (125 MHz) of **1** in $CDCl_3$.

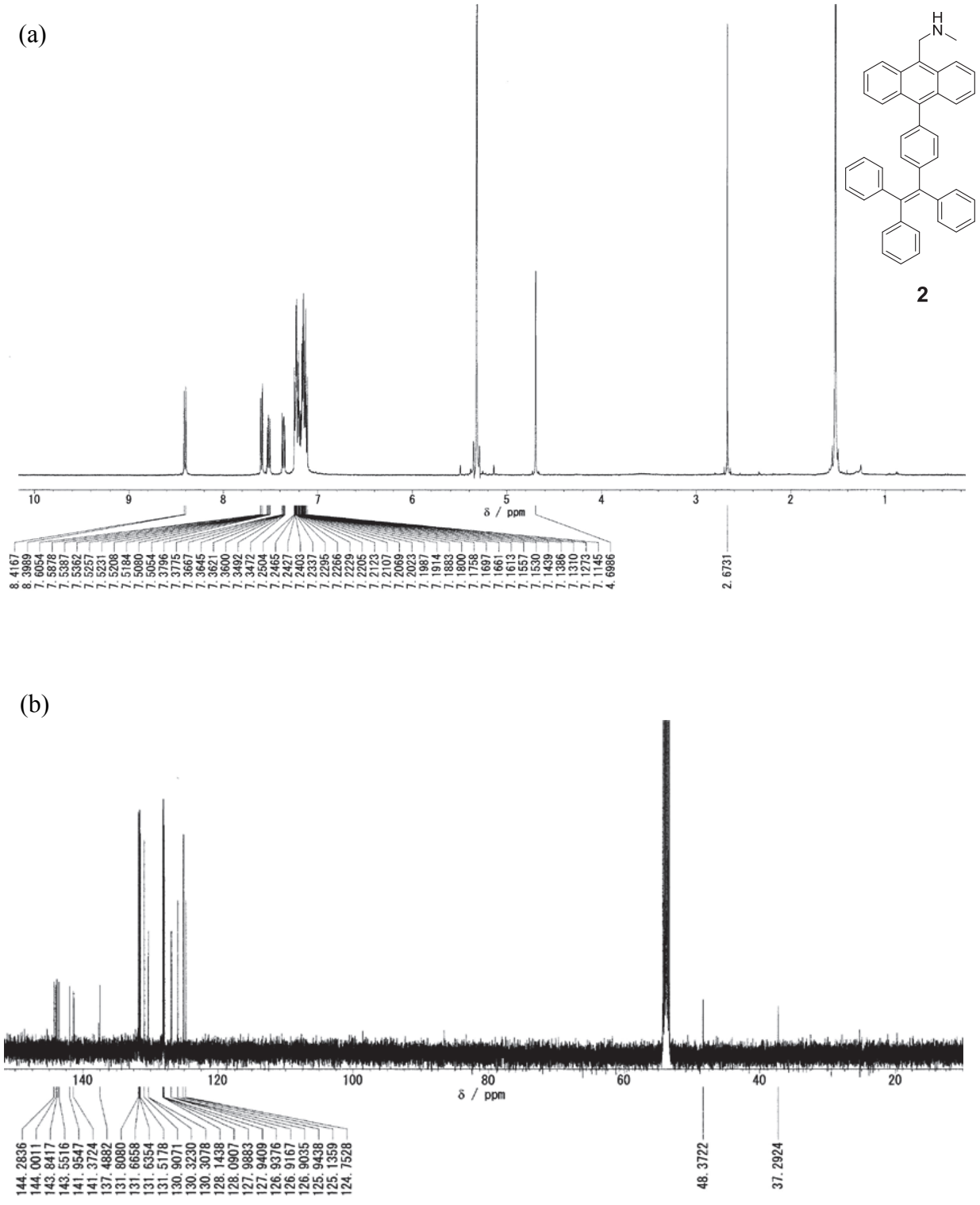

Fig. S2 (a) ^{1}H HMR (500 MHz) and (b) ^{13}C HMR (125 MHz) of **2** in CD_2Cl_2.

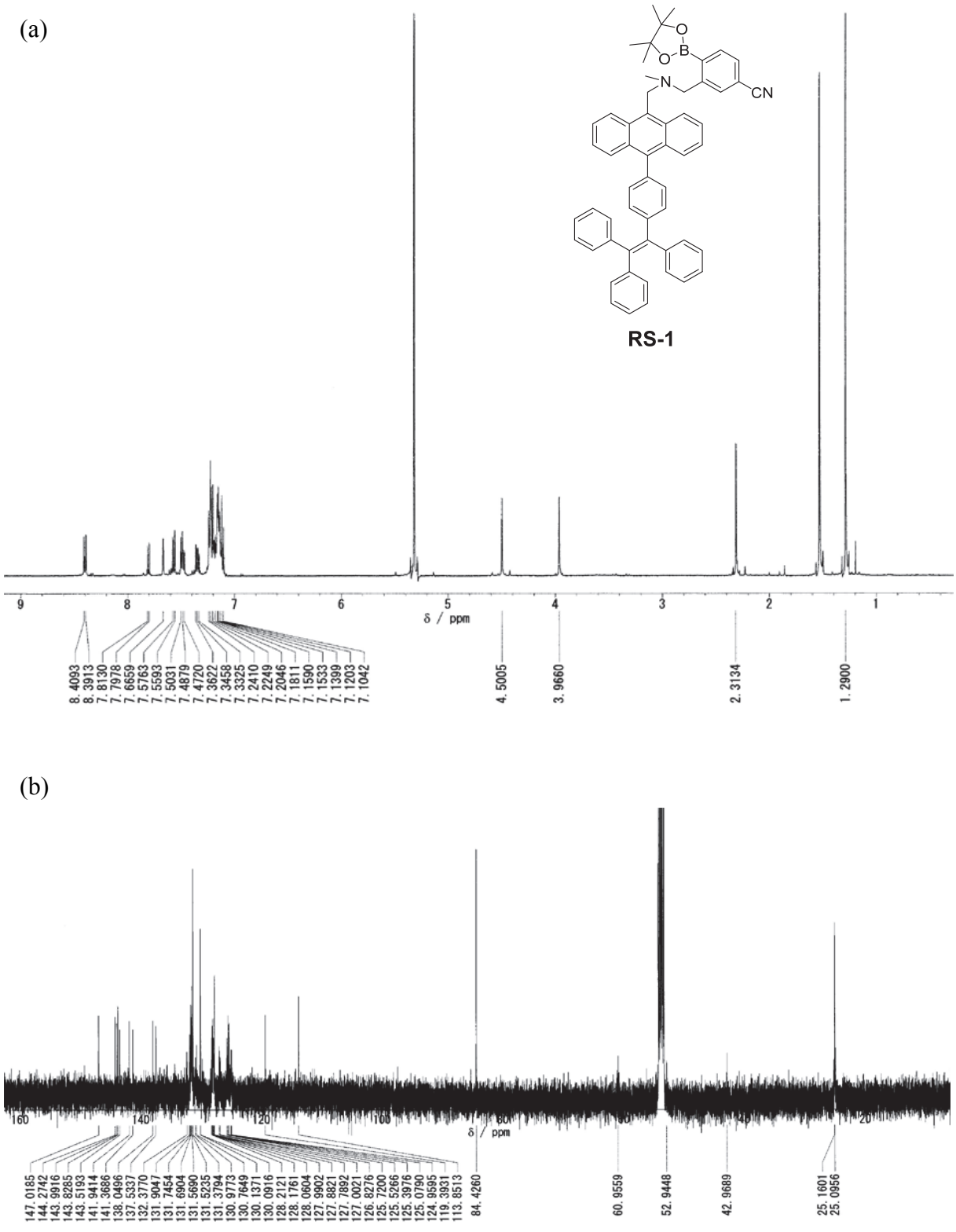

Fig. S3 (a) ^{1}H HMR (500 MHz) and (b) ^{13}C HMR (125 MHz) of **RS-1** in CD_2Cl_2.

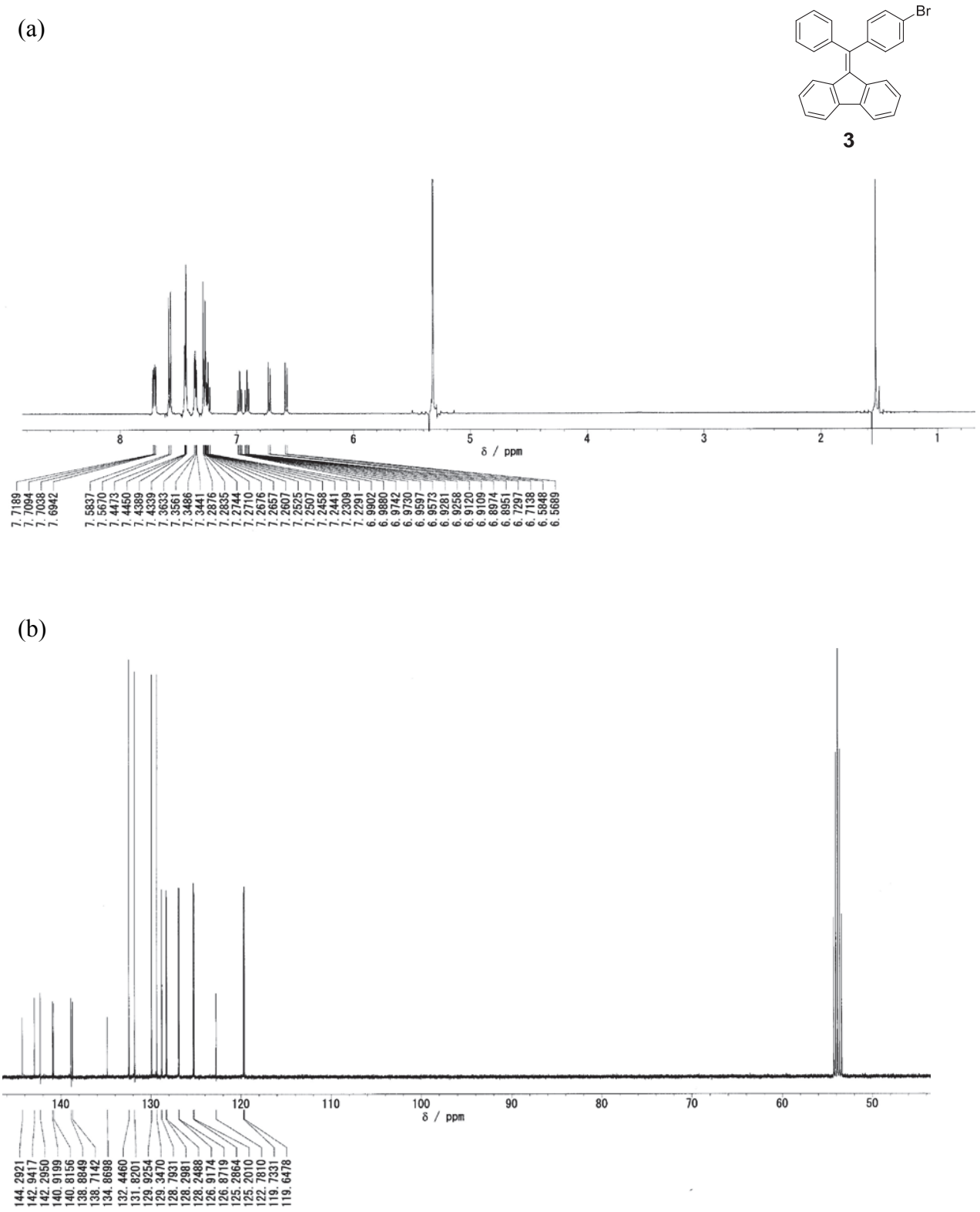

Fig. S4 (a) ^{1}H HMR (500 MHz) and (b) ^{13}C HMR (125 MHz) of **3** in CD_2Cl_2.

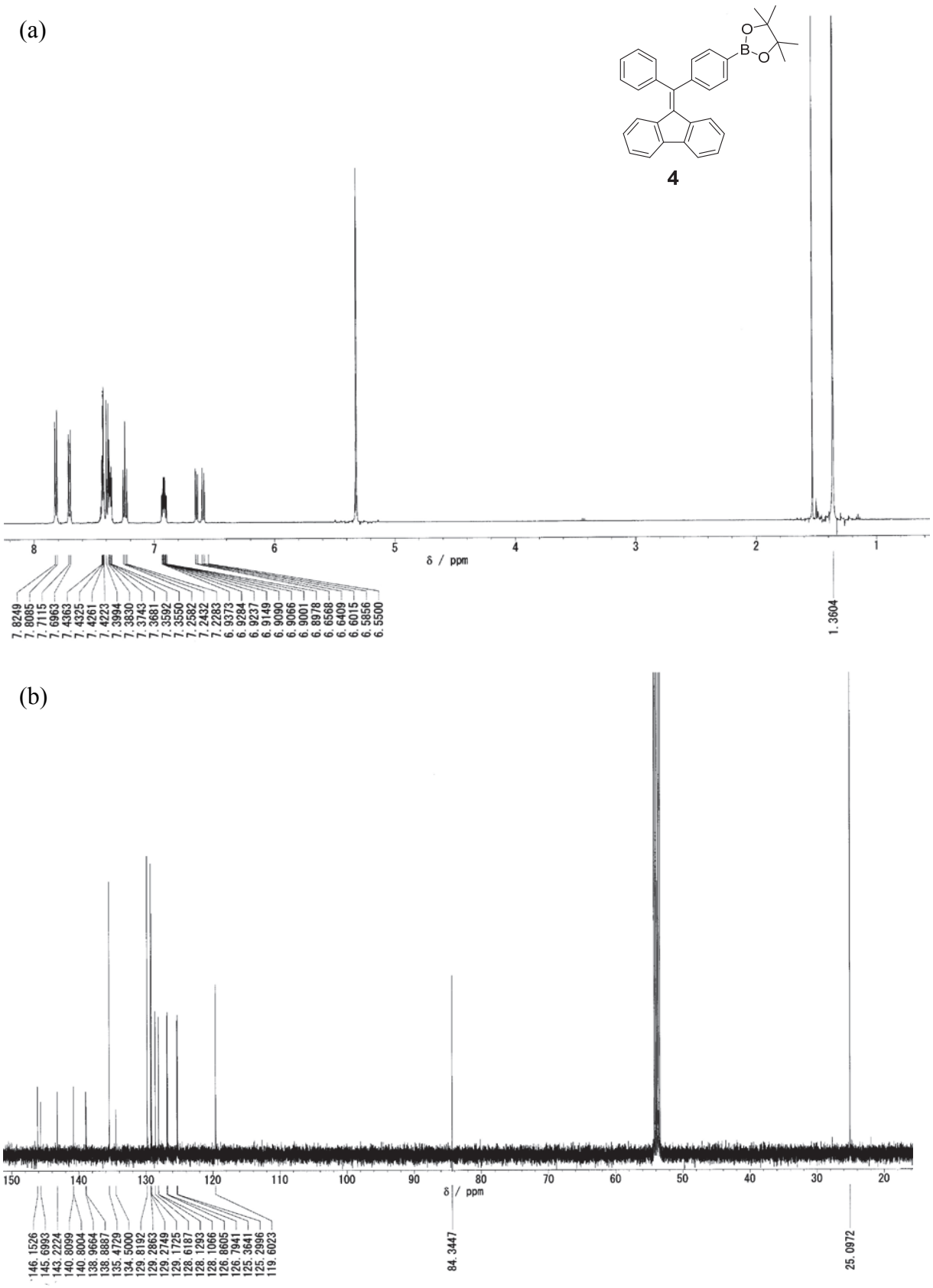

Fig. S5 (a) ^{1}H HMR (500 MHz) and (b) ^{13}C HMR (125 MHz) of **4** in CD_2Cl_2.

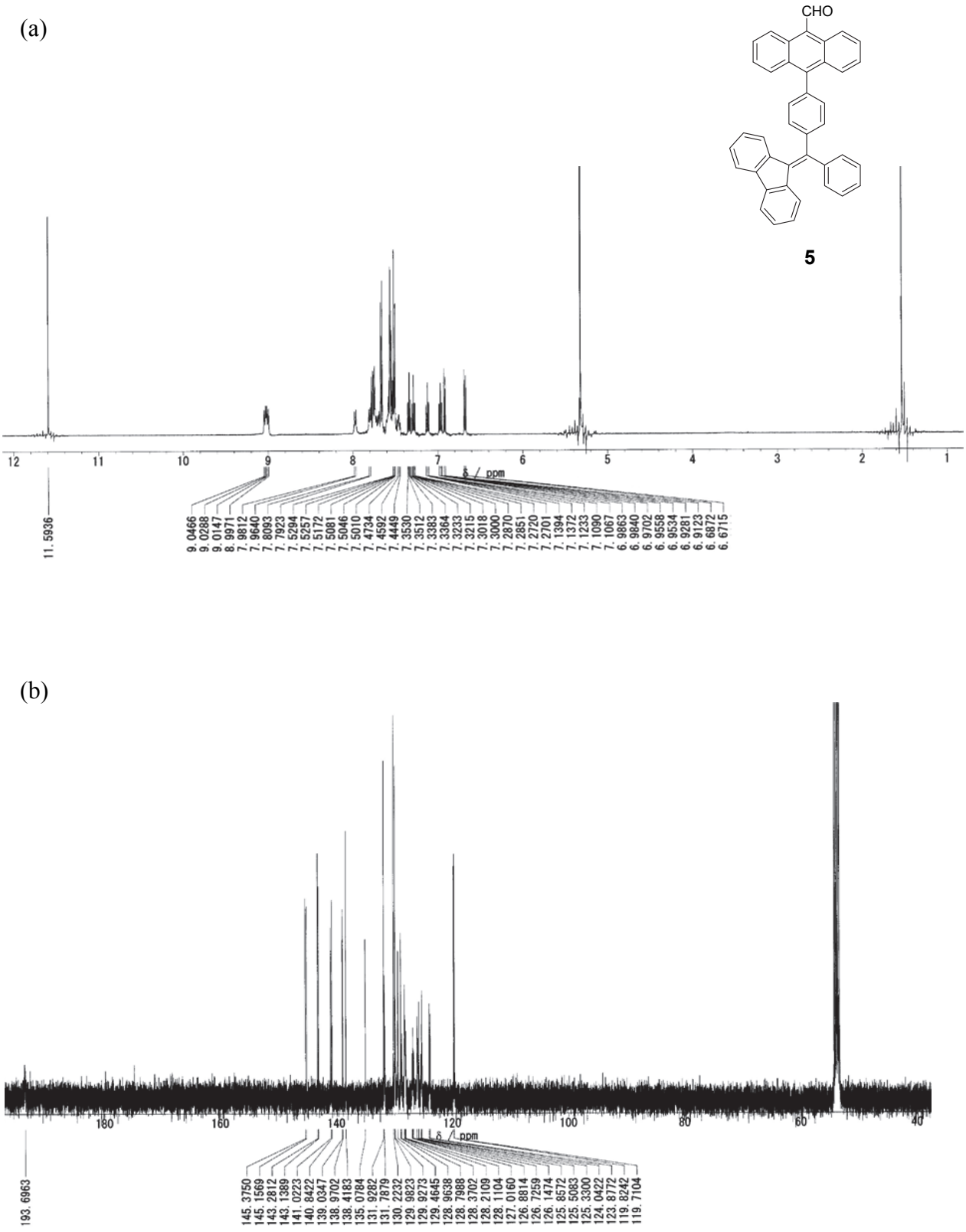

Fig. S6 (a) ^{1}H HMR (500 MHz) and (b) ^{13}C HMR (125 MHz) of **5** in CD_2Cl_2.

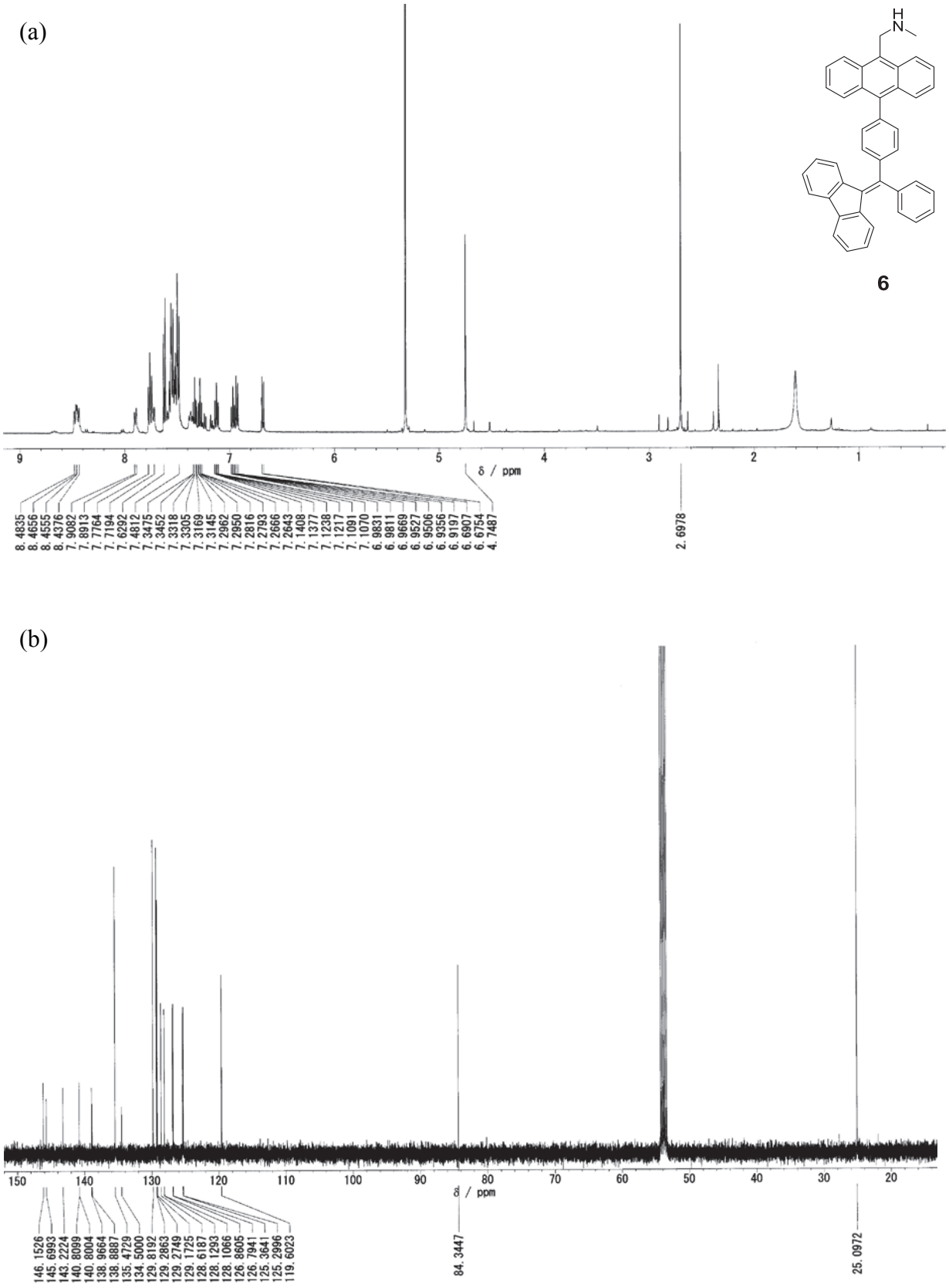

Fig. S7 (a) ^{1}H HMR (500 MHz) and (b) ^{13}C HMR (125 MHz) of **6** in CD_2Cl_2.

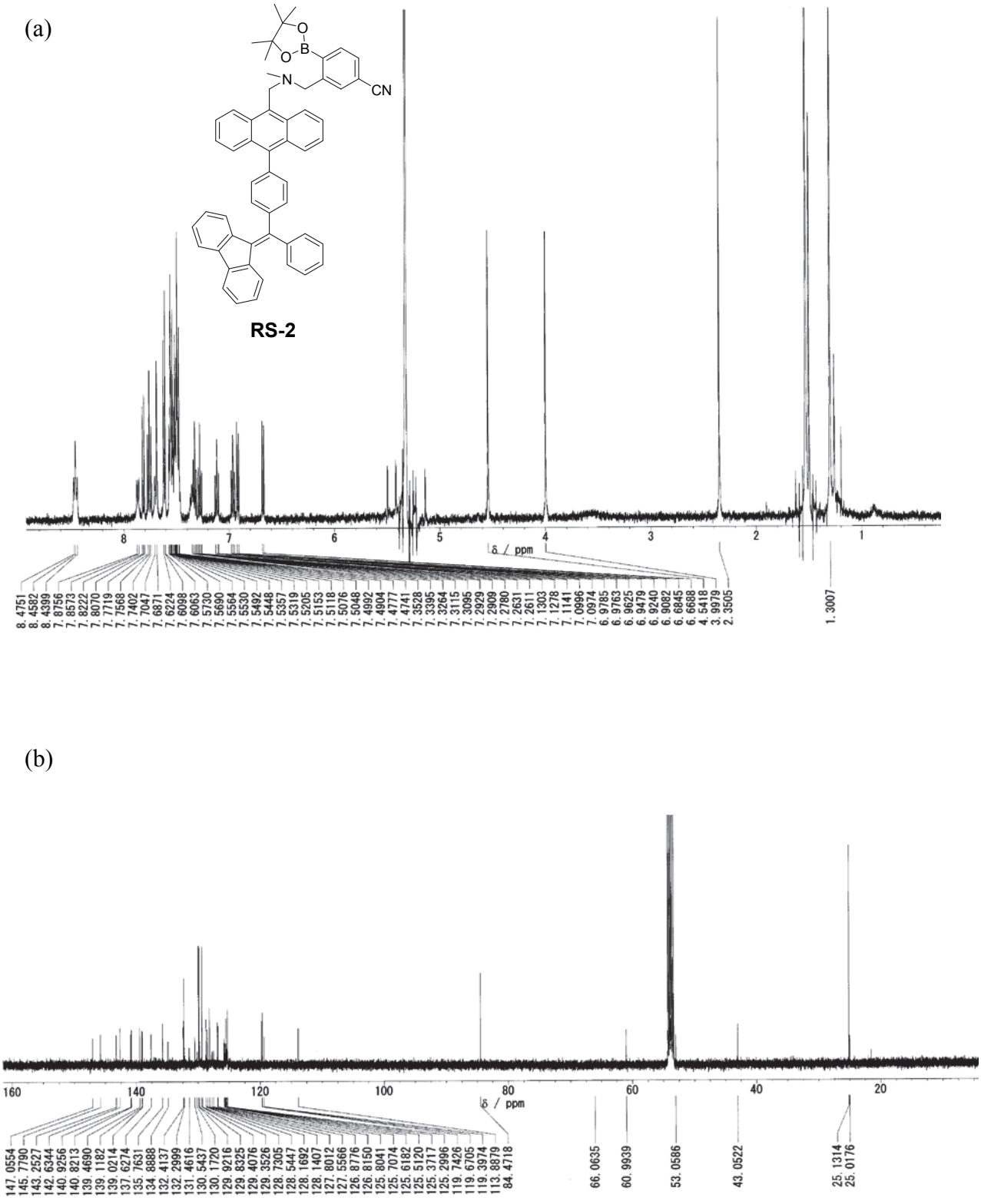

Fig. S8 (a) ^{1}H HMR (500 MHz) and (b) ^{13}C HMR (125 MHz) of **RS-2** in CD_2Cl_2.

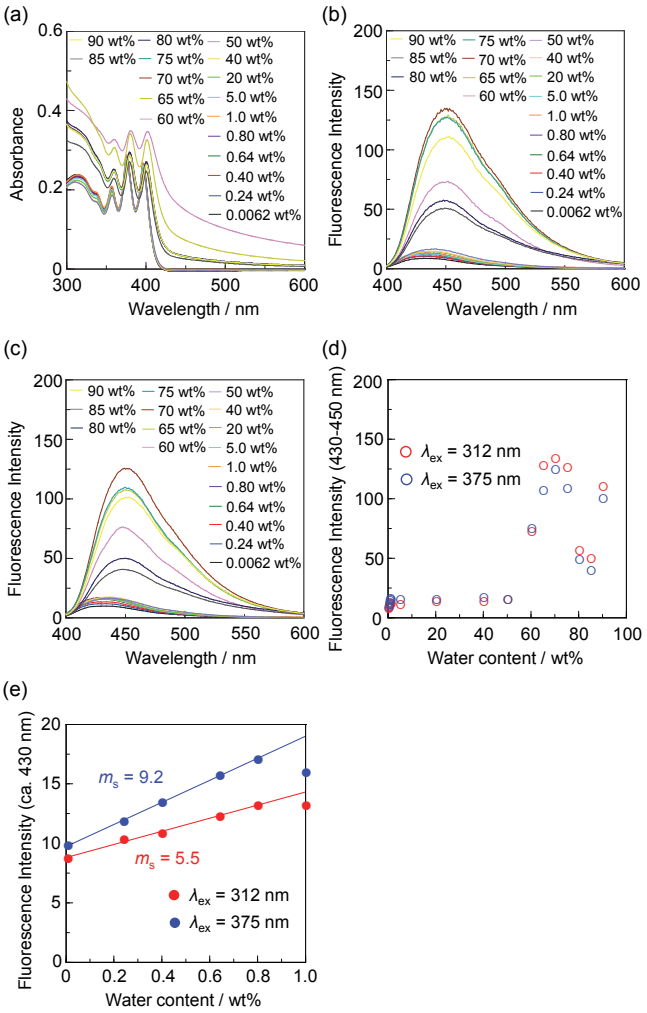

Fig. S9 (a) Absorption of **RS-1** (c = 2.0×10^{-5} M) in 1,4-dioxane containing water (0.0062–90 wt%). Fluorescence spectra of **RS-1** (c = 2.0×10^{-5} M) by λ_{ex} at (b) 312 nm and (c) 375 nm in 1,4-dioxane containing water (0.0062–90 wt%). (d) Fluorescence peak intensity at 430-450 nm of **RS-1** by λ_{ex} at 312 nm and 375 nm as a function of water content (0.0062–90 wt%) in 1,4-dioxane. (e) Fluorescence peak intensity at ca. 430 nm of **RS-1** by λ_{ex} at 312 nm and 375 nm as a function of water content in 1,4-dioxane in a water-content region below 1.0 wt%.

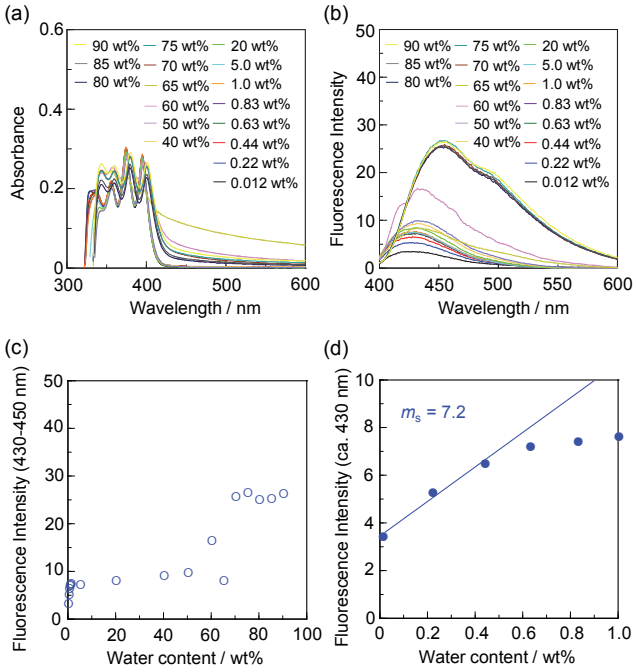

Fig. S10 (a) Absorption of **RS-1** (c = 2.0×10^{-5} M) in acetone containing water (0.012–90 wt%). (b) Fluorescence spectra of **RS-1** (c = 2.0×10^{-5} M) by λ_{ex} at 375 nm in acetone containing water (0.012–90 wt%). (c) Fluorescence peak intensity at 430-450 nm of **RS-1** by λ_{ex} at 375 nm as a function of water content (0.012–90 wt%) in acetone. (d) Fluorescence peak intensity at ca. 430 nm of **RS-1** by λ_{ex} at 375 nm as a function of water content in acetone in a water-content region below 1.0 wt%.

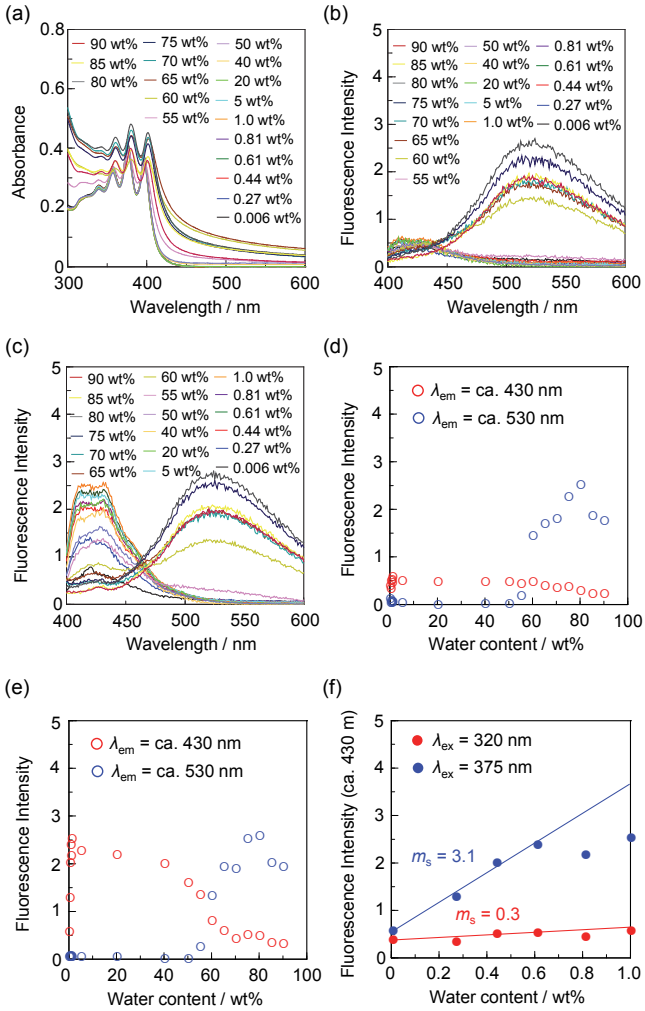

Fig. S11 (a) Absorption of **RS-2** (c = 2.0×10^{-5} M) in 1,4-dioxane containing water (0.006–90 wt%). Fluorescence spectra of **RS-2** (c = 2.0×10^{-5} M) by λ_{ex} at (b) 320 nm and (c) 375 nm in 1,4-dioxane containing water (0.006–90 wt%). Fluorescence peak intensity at ca. 430 nm and ca. 530 nm of **RS-2** by λ_{ex} at (d) 320 nm and (e) 375 nm as a function of water content (0.006–90 wt%) in 1,4-dioxane. (f) Fluorescence peak intensity at ca. 430 nm of **RS-2** by λ_{ex} at 320 nm and 375 nm as a function of water content in 1,4-dioxane in a water-content region below 1.0 wt%.

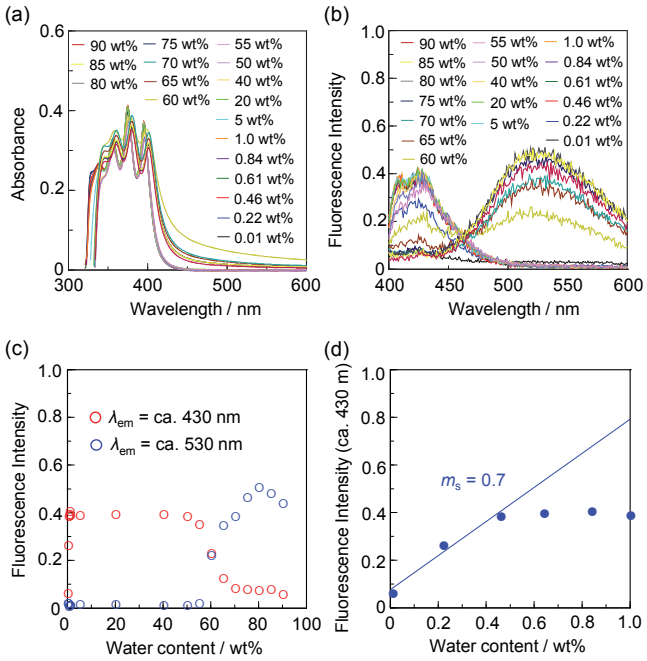

Fig. S12 (a) Absorption of **RS-2** (c = 2.0×10^{-5} M) in acetone containing water (0.01–90 wt%). (b) Fluorescence spectra of **RS-2** (c = 2.0×10^{-5} M) by λ_{ex} at 375 nm in acetone containing water (0.01–90 wt%). (c) Fluorescence peak intensity at ca. 430 nm and ca. 530 nm of **RS-2** by λ_{ex} at 375 nm as a function of water content (0.01–90 wt%) in acetone. (d) Fluorescence peak intensity at ca. 430 nm of **RS-2** by λ_{ex} at 375 nm as a function of water content in acetone in a water-content region below 1.0 wt%.