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## Effect of chalcogens on CO insertion into the palladium-methyl bond of

## $[(N^N^X)Pd(CH_3)]^+$ (X = O, S, Se) and on CO/ethylene copolymerisation

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Figure S1: <sup>1</sup>H NMR spectrum of L1



Figure S2: <sup>1</sup>H NMR spectrum of **1a** 



Figure S3: <sup>1</sup>H NMR spectrum of CO/ethylene copolymer in HFIP



Figure S4:  ${}^{13}C{}^{1}H$  NMR spectrum of CO/ethylene copolymer in HFIP



Figure S5: FT-IR spectrum of CO/ethylene copolymer



Figure S6: DSC thermogram of CO/ethylene copolymer



Figure S7: TGA thermogram of CO/ethylene copolymer



Figure S8: <sup>1</sup>H NMR spectra of complexes  $\mathbf{5b}$  and  $\mathbf{5c}$ 



Figure S9: Variable temperature <sup>1</sup>H NMR of complex **5**c



Figure S10: FT-IR spectrum of 1c