# X-RAY STRUCTURAL AND GAS PHASE STUDIES OF SILVER(I) PERFLUORINATED CARBOXYLATES COMPLEXES WITH 2,2'- BIPYRIDYL AS POTENTIAL PRECURSORS FOR CHEMICAL VAPOR DEPOSITION (CVD)

Edward Szłyk, Robert Szczęsny, Andrzej Wojtczak

Nicolaus Copernicus University, Faculty of Chemistry, 87 100 Toruń, Poland

## SUPLEMENTARTARY INFORMATION

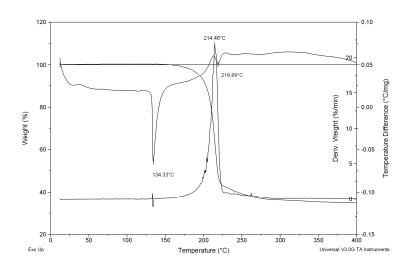
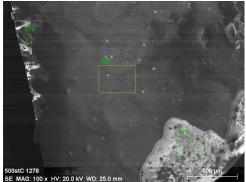


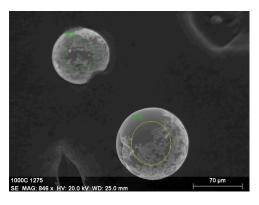
Fig. 1. TG, DTG and DTA plots for  $[Ag(CF_3COO)(bpy)]$  (1)  $(5^{\circ}/min., N_2)$ .



### Mass percent (%)

Spectrum	С	0	F	Al	Ag
978 979 980	2.61	52.86 50.51 6.05	-	38.62 37.30 1.03	7.44
Mean value: Sigma: Sigma mean:	0.53	26.38	7.62	25.65 2 <b>1</b> .33 12.32	44.97





Mass percent (%)

Spectrum	С	0	Mg	Al	Ag
975 976		14.87 15.53			
Mean value: Sigma: Sigma mean:	0.03	0.47	0.36	0.35	0.55

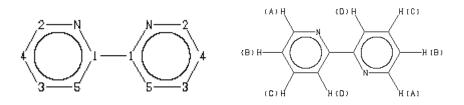
b)

Fig. 2. SEM micrographs and EDX spectra of the decomposition product of [Ag(CF<sub>3</sub>COO)(bpy)] (1) on crucible surfaces. (5°/min.,  $N_2$ ): a) under heating to 500°C, b) under heating to 1000°C.

Tab. 1. <sup>13</sup>C, <sup>1</sup>H NMR spectra analysis for **(1)**, **(2)** and **(3)** [ppm] (CD<sub>3</sub>Cl<sub>3</sub>).

	(1)	(2)	(3)
<sup>1</sup> H	8.77 (A)	8.76 (A)	8.71 (A)
	7.51 (B)	7.49 (B)	7.46 (B)
	7.99 (C)	7.97 (C)	7.98 (C)
	8.18 (D)	8.11 (D)	8.14 (D)
<sup>13</sup> C	122.0 (5)	121.9 (5)	122.1 (5)
	125.5 (4)	125.7 (4)	125.6 (4)
	138.9 (3)	138.9 (3)	138.9 (3)
	151.2 (2)	151.3 (2)	151.5 (2)
	151.6 (1)	151.5 (1)	- (1)
	162.6 (δ COO,q)	162.6 (δ COO,t)	163.0 (δ COO,t)
	Δ <sub>COO</sub> = <b>0.5</b>	Δ <sub>COO</sub> = <b>3.4</b>	Δ <sub>COO</sub> = <b>3.9</b>

### Electronic Supplementary Information for Dalton Transactions This journal is © The Royal Society of Chemistry 2010



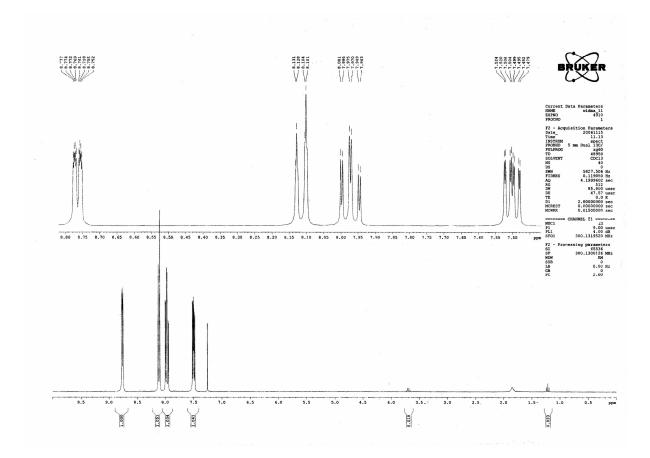


Fig. 3.  $^{1}$ H NMR spectra of [Ag<sub>2</sub>(C<sub>2</sub>F<sub>5</sub>COO)<sub>2</sub>(bpy)] **(2)**.

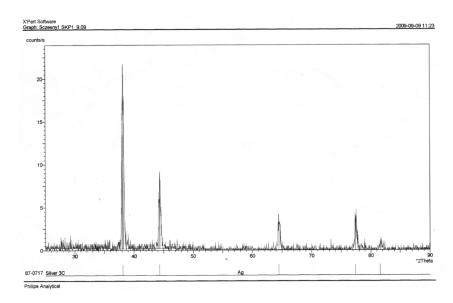


Fig. 4. XRD pattern of film obtained from [Ag<sub>2</sub>( $C_2F_5COO$ )<sub>2</sub>(bpy)] (2) (thinner film).

# Electronic Supplementary Information for Dalton Transactions This journal is © The Royal Society of Chemistry 2010

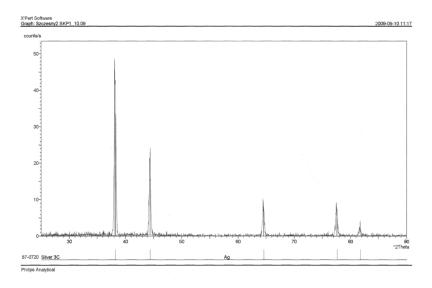


Fig. 5. XRD pattern of film obtained from  $[Ag_2(C_2F_5COO)_2(bpy)]$  (argest thickness).