Electronic Supplementary Information

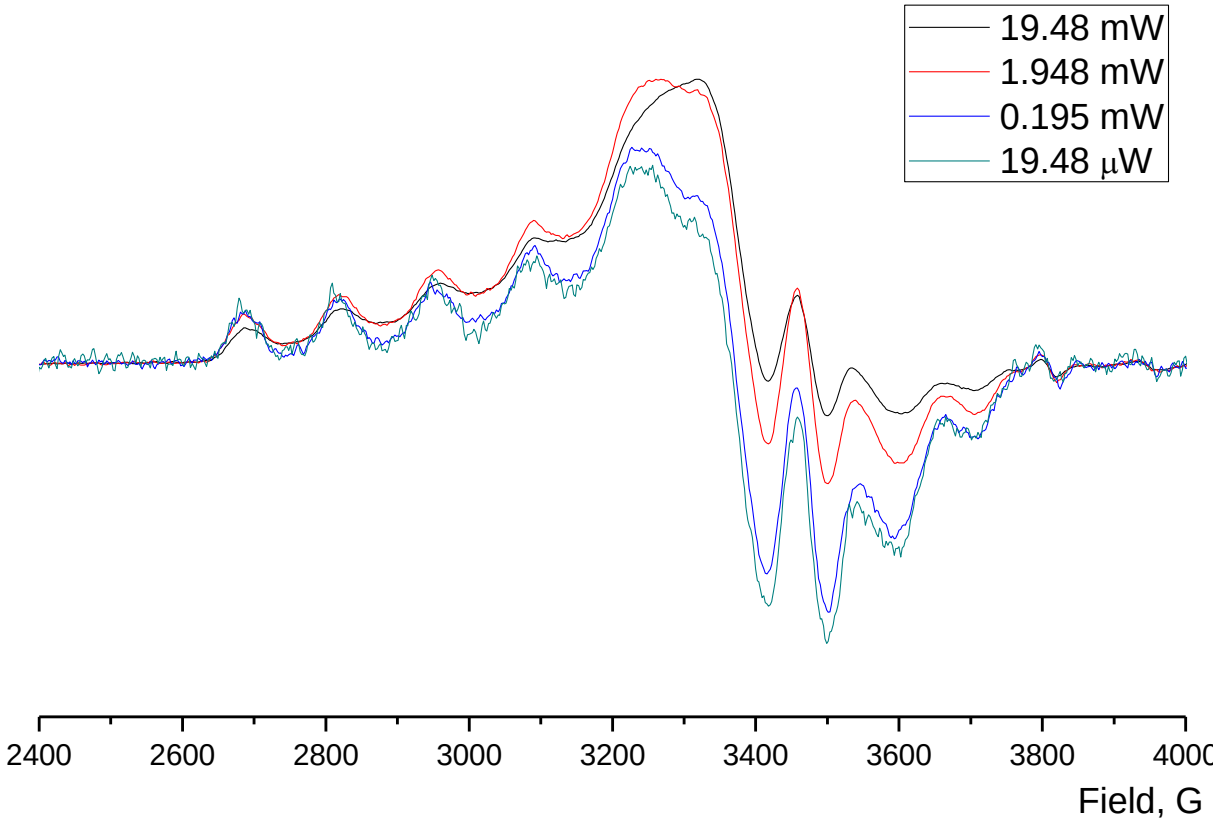

Fig. ESI1. The influence of microwave power on an EPR spectra lineshape for the clathrochelate $CoBd_2(S_2\text{-}Nx)(BF)_2$ at 80K.

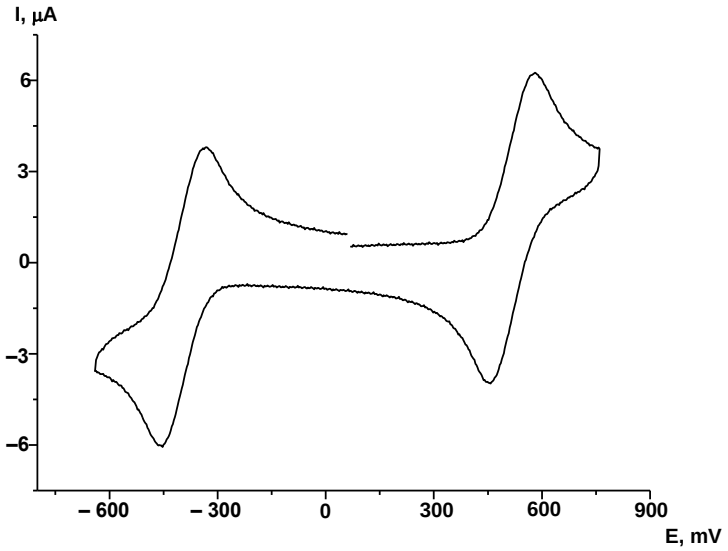

Fig. ESI2. CV for the clathrochelate $CoBd_2((C_2H_5)_2NGmCl)(BF)_2$.

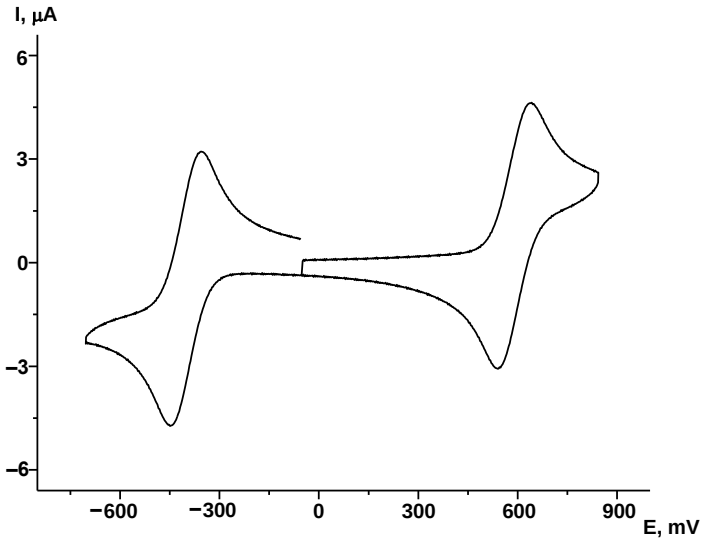

Fig. ESI3. CV for the macrobicycle $CoBd_2((n\text{-}C_{12}H_{25}S)_2Gm)(BF)_2$.

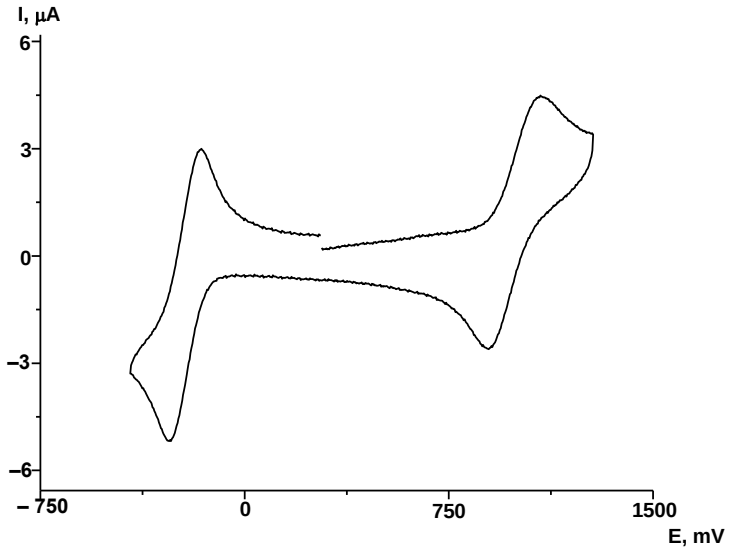

Fig. ESI4. CV for the complex $Co(Cl_2Gm)_3(B\mathit{n}\text{-}C_4H_9)_2$.

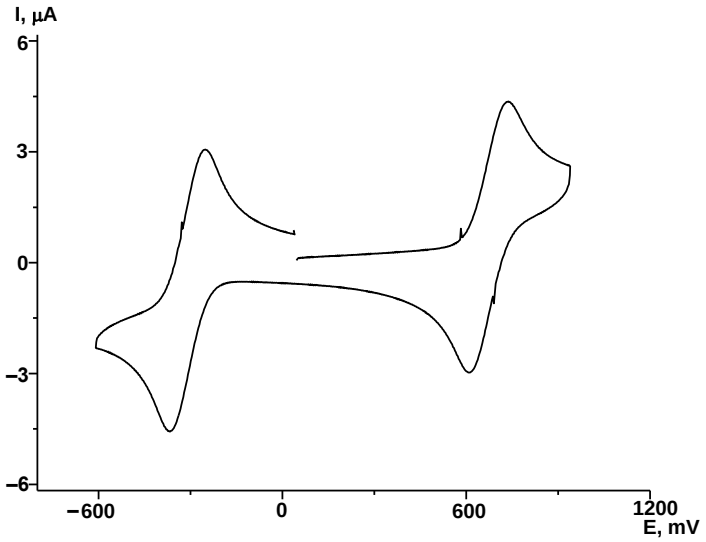

Fig. ESI5. CV for the clathrochelate $CoBd_2(HGmCl)(BF)_2$.

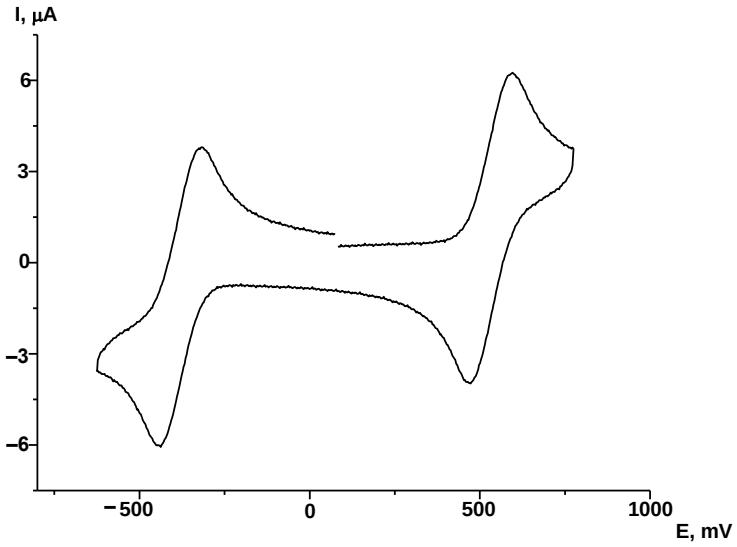

Fig. ESI6. CV for the complex $CoBd_2(S_2\text{-}Nx)(BF)_2$.

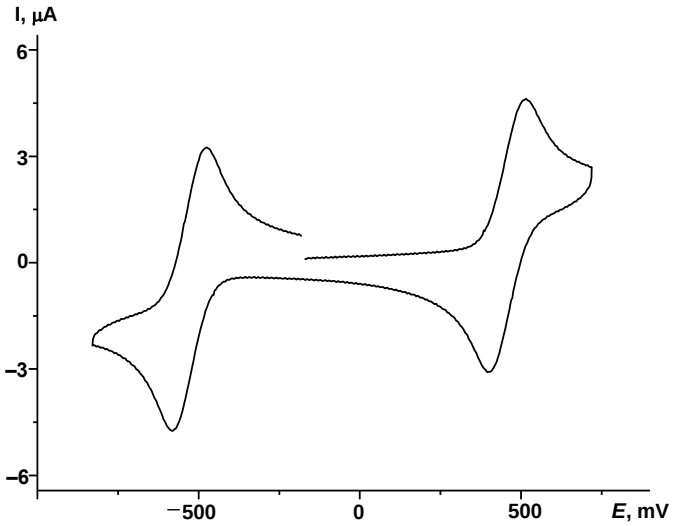

Fig. ESI7. CV for the complex $CoBd_2(N_2\text{-Nx})(BF)_2$.

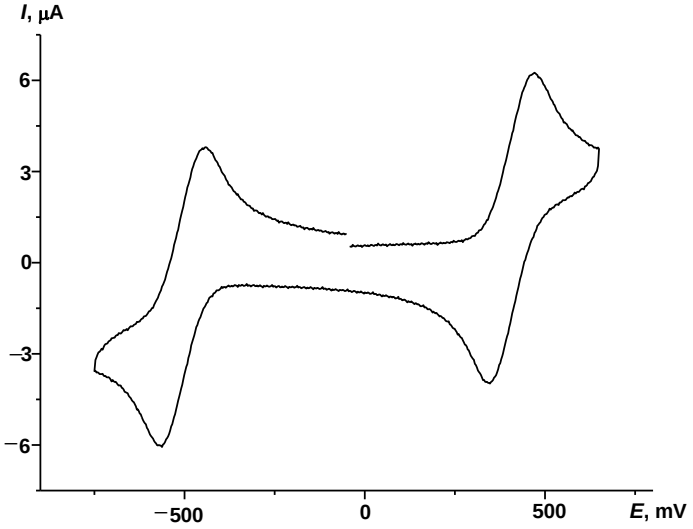

Fig. ESI8. CV for the macrobicycle $CoBd_2((n\text{-}C_4H_9NH)_2Gm)(BF)_2$.

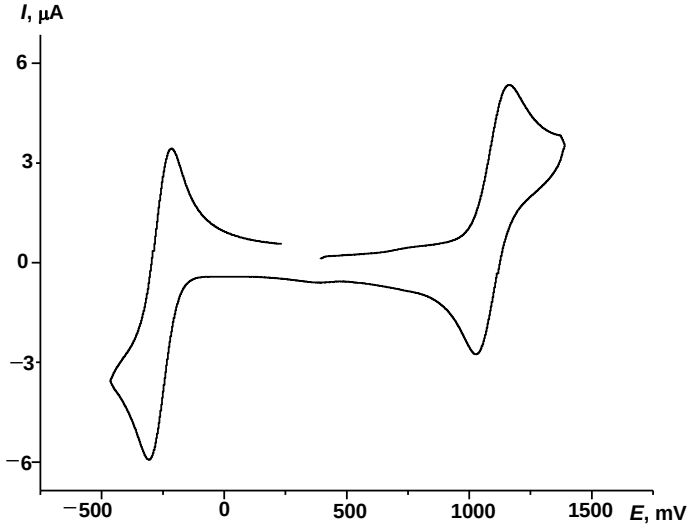

Fig. ESI9. CV for the clathrochelate $Co(Cl_2Gm)_3(BC_6H_5)_2$.

Table ESI1. The maxima (λ_{max}/nm ($\varepsilon \cdot 10^{-3}$, mol^{-1} l cm^{-1}) of the UV–vis spectra for the clathrochelate cobalt(II) tris-dioximates.

Complex	ν_1 (ε_1)	ν_2 (ε_2)	ν_3 (ε_3)	ν_4 (ε_4)	ν_5 (ε_5)	ν_6 (ε_6)	ν_7 (ε_7)	ν_8 (ε_8)	ν_9 (ε_9)	ν_{10} (ε_{10})
$CoBd_2(Cl_2Gm)(BF)_2$	248 (31)	289 (16)	366 (7.7)	380 (4.3)	443 (5.1)	485 (8.5)	524 (2.1)			
$CoBd_2(HGmCl)(BF)_2$	243 (14)	258 (5.5)	281 (4.2)	302 (4.5)	354 (3.9)	380 (1.7)	445 (1.6)	486 (3.7)	529 (0.7)	
$CoBd_2((n\text{-}C_4H_9NH)_2Gm)(BF)_2$	231 (31)	255 (15)	267 (8.3)	285 (18)	308 (11)	341 (5.3)	357 (3.0)	391 (4.4)	445 (3.7)	514 (2.9)
$CoBd_2((n\text{-}C_{12}H_{25}S)_2Gm)(BF)_2$	253 (30)	284 (3.9)	295 (15)	340 (7.1)	389 (10)	465 (3.5)	500 (8.0)			
$CoBd_2(HGm(SCH_2CH_2SCH_2CH_2SH))(BF)_2$	241 (14)	246 (11)	259 (7.1)	278 (15)	329 (6.7)	383 (7.0)	440 (2.7)	488 (2.7)	491 (5.2)	
$CoBd_2(HGm(SCH_2CH_2SH))(BF)_2$	245 (25)	259 (12)	281 (10)	303 (9.8)	344 (5.3)	382 (6.7)	421 (3.2)	487 (2.0)	491 (5.5)	
$CoBd_2(((C_2H_5)_2N)GmCl)(BF)_2$	278 (15)	302 (9.0)	337 (7.3)	370 (5.8)	390 (4.1)	427 (4.0)	479 (3.3)	502 (4.9)		
$CoBd_2(N_2\text{-}Nx)(BF)_2$	260 (25)	297 (18)	342 (3.0)	364 (4.9)	393 (1.2)	428 (3.5)	509 (3.1)			
$CoBd_2(S_2\text{-}Nx)(BF)_2$	255 (23)	285 (12)	304 (11)	342 (6.8)	387 (9.2)	458 (3.3)	497 (7.5)			
$CoBd_2((n\text{-}C_4H_9O)_2Gm)(BF)_2$	252 (24)	275 (18)	305 (9.7)	348 (6.1)	384 (5.3)	455 (4.6)	498 (4.0)			
$Co(Cl_2Gm)_3(Bn\text{-}C_4H_9)_2$ [1d]	267 (20)	287 (8.4)	329 (3.1)	368 (3.2)	421 (0.64)	468 (1.6)				
$Co(Cl_2Gm)_3(BF)_2$ [1d]	262 (16)	283 (7.0)	341 (2.4)	367 (1.9)	402 (0.53)	456(0.75)				
$Co((n\text{-}C_4H_9S)_2Gm)_3(BC_6H_5)_2$ [1d]	237 (31)	314 (11)	402 (6.8)	473 (2.2)	516 (5.7)					
$CoBd_3(Bn\text{-}C_4H_9)_2$	259 (38)	271 (15)	296 (15)	328 (7.5)	390 (11)	462 (3.8)	502 (9.0)			