Electronic Supplementary Information

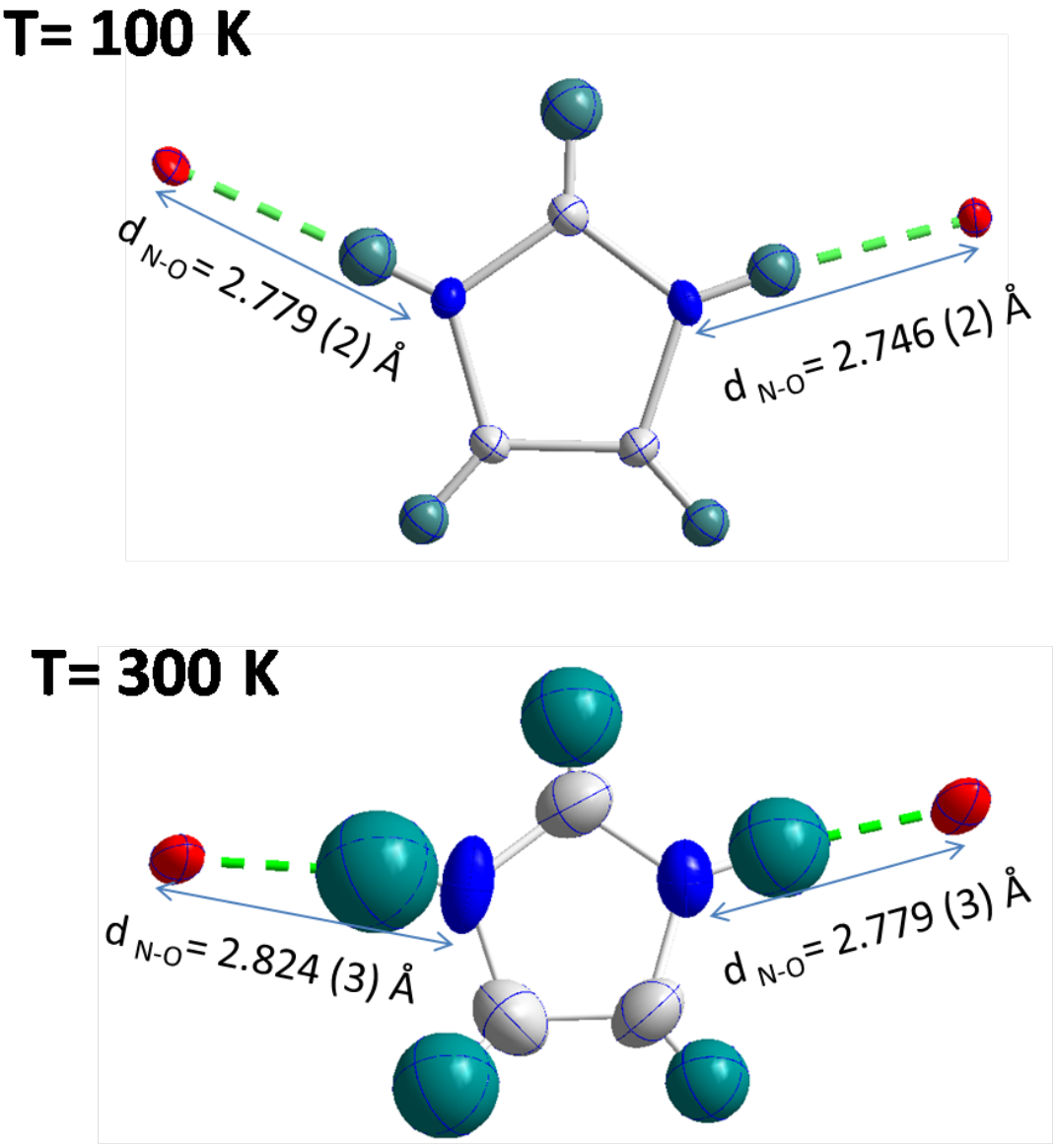

Figure S1. Detail of the imidazolium cation structural parameters, obtained by single-crystal X-ray diffraction. Displacement ellipsoids are represented at the 50% probability level.

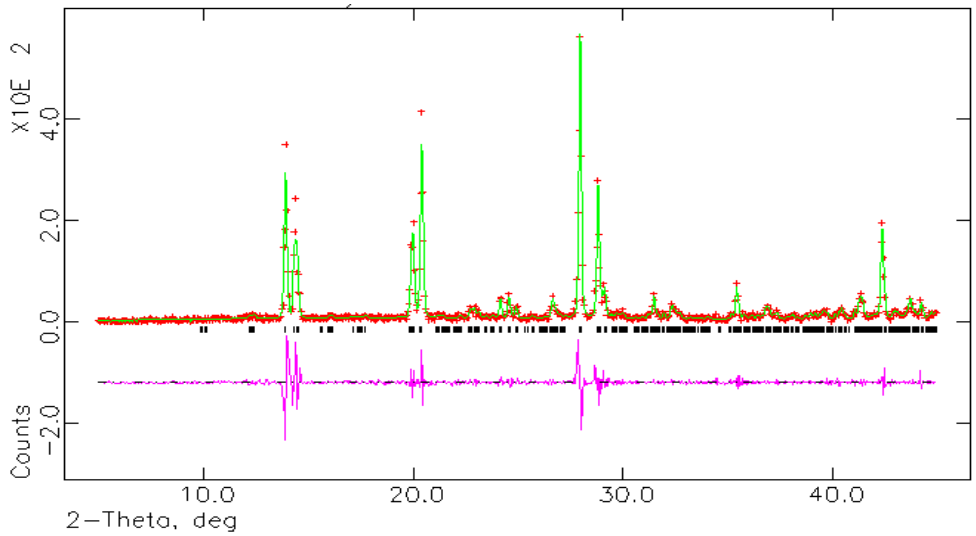

Figure S2.- LeBail refinement of the room temperature powder X-ray diffraction for $(C_3N_2H_5)[Mn(HCOO)_3]$ Key: observed data (+) and calculated profile (solid line); the difference plot is drawn below the profile. Tick marks indicate peak positions of the $(C_3N_2H_5)[Mn(HCOO)_3]$ phase.

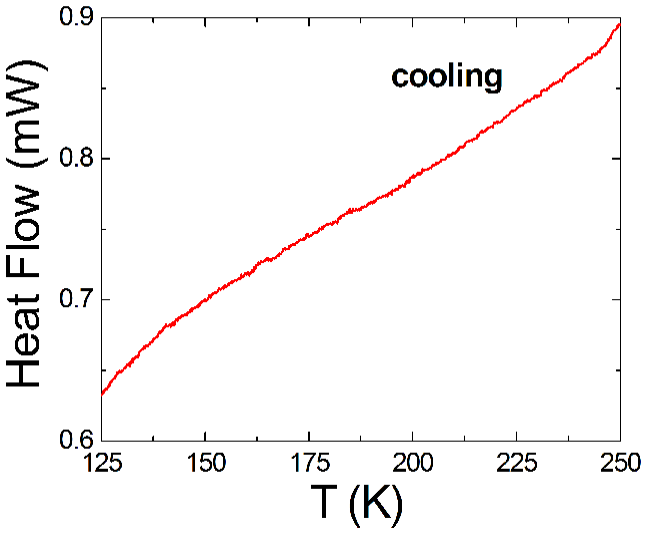

Figure S3. Results of the DSC study of $(C_3N_2H_5)[Mn(HCOO)_3]$: heat flow as a function of temperature obtained by cooling at a rate of 10 K/min.

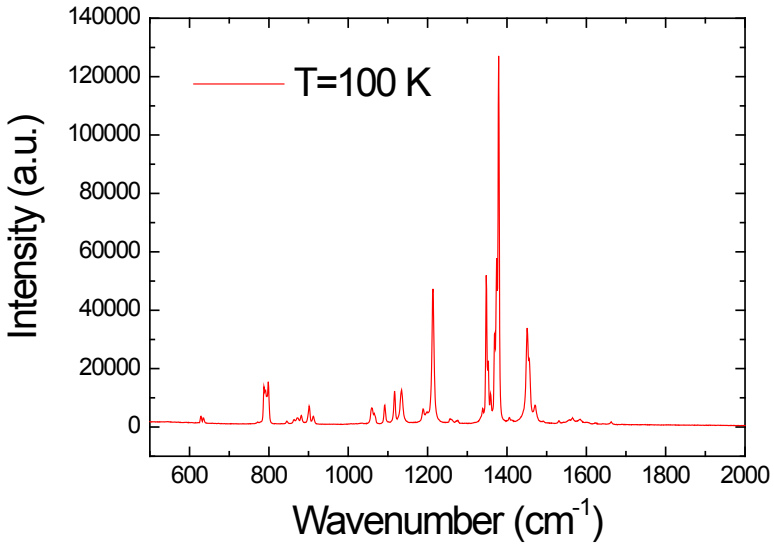

Figure S4. Raman spectra of the $(C_3N_2H_5)[Mn(HCOO)_3]$ compound recorded at 100 K.

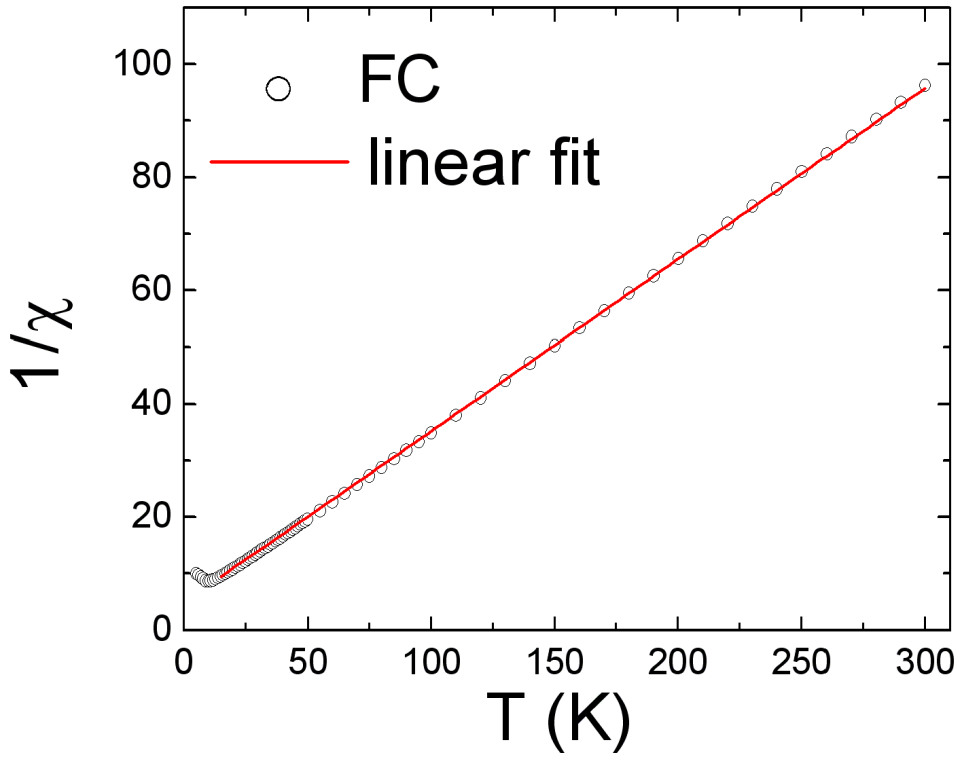

Figure S5.- Plot of the inverse of the magnetic susceptibility (χ) *vs.* temperature (T) for $(C_3N_2H_5)[Mn(HCOO)_3]$, measured under an applied magnetic field of 1000 Oe. The line shows the best fitting to the Curie-Weiss law at T>20 K.

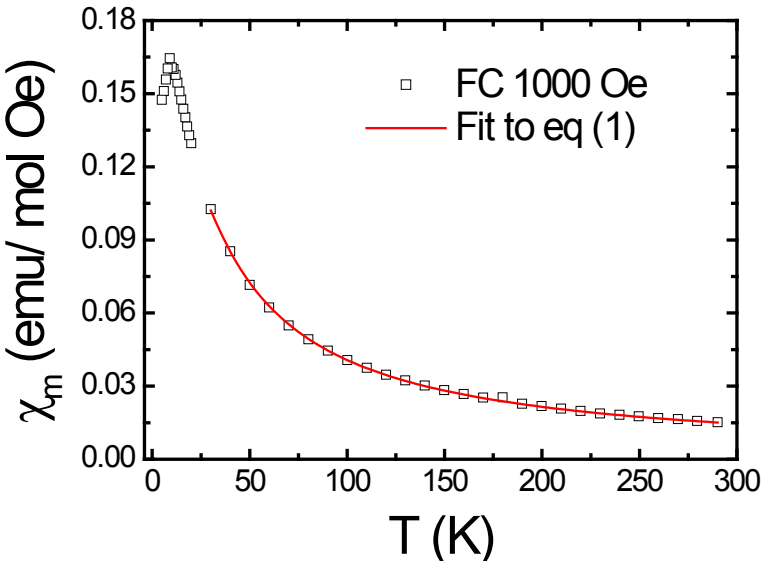

Figure S6.- Plot of the magnetic susceptibility (χ) *vs.* temperature (T) for $(C_3N_2H_5)[Mn(HCOO)_3]$, measured under an applied magnetic field of 1000 Oe. The solid line shows the best least-squares fitting of the susceptibility data (from 30K to 300 K) using eq. 1.

Electronic Supplementary Material (ESI) for RSC Advances

Table SI Selected bond lengths in Å from the single-crystal X-ray diffraction study at 295 K and at 100 K.

Mn environment				**Formate anions**		
	100 K	**295 K**			**100 K**	**295 K**
Mn(2)-O(1)	2.200(1)	2.198(2)		C(7)-O(6)	1.247(2)	1.218(3)
Mn(2)-O(4)	2.142(1)	2.140(2)		C(7)-O(11)	1.248(2)	1.233(3)
Mn(2)-O(2)	2.167(1)	2.164(2)		C(8)-O(2)	1.242(2)	1.222(3)
Mn(2)-O6)	2.156(1)	2.154(2)		C(8)-O(7)	1.258(2)	1.243(3)
Mn(2)-O(3)	2.180(1)	2.180(2)		C(9)-O(1)	1.258(3)	1.240(3)
Mn(2)-O(5)	2.155(1)	2.148(2)		C(9)-O(12)	1.239(3)	1.233(3)
Bond Valence Sum	1.96	1.97		C(10)-O(8)	1.264(2)	1.240(3)
				C(10)-O(5)	1.247(2)	1.233(3)
Mn(1)-O(9)	2.131(1)	2.139(2)		C(11)-O(3)	1.233(2)	1.217(3)
Mn(1)-O(12)	2.171(1)	2.166(2)		C(11)-O(10)	1.265(2)	1.246(3)
Mn(1)-O(7)	2.197(1)	2.195(2)		C(12)-O(4)	1.250(3)	1.233(3)
Mn(1)-O(11)	2.156(1)	2.155(2)		C(12)-O(9)	1.239(3)	1.206(3)
Mn(1)-O(8)	2.180(1)	2.179(2)				
Mn(1)-O(10)	2.179(1)	2.177(2)				
Bond Valence Sum	1.95	1.95				
Imidazolium 1				**Imidazolium 2**		
	100 K	**295 K**			**100 K**	**295 K**
C(1)-N(1)	1.322(3)	1.291(4)		C(5)-N(4)	1.327(3)	1.317(5)
N(1)-C(2)	1.374(3)	1.344(5)		N(4)-C(4)	1.373(3)	1.338(5)
C(2)-C(3)	1.345(3)	1.328(6)		C(4)-C(6)	1.350(3)	1.323(5)
C(3)-N(2)	1.370(3)	1.350(6)		C(6)-N(5)	1.376(3)	1.351(4)
N(2)-C(1)	1.326(3)	1.292(5)		N(5)-C(5)	1.322(3)	1.321(5)
$d_{N(ImH)-O(formate)}$: H-bond length				**$d_{N(ImH)-O(formate)}$: H-bond length**		
	100 K	**295 K**			**100 K**	**295 K**
d_{N-O} $ImH^+(1)$	2.754(2)	2.785(2)		d_{N-O} $ImH^+(2)$	2.779(2)	2.825(2)
	2.746(2)	2.846(2)			2.746(2)	2.779(2)

Table SII: Vibrational frequencies (in cm^{-1}) obtained by Raman spectroscopy at 100 K for $[(C_3N_2H_5)][Mn(HCOO)_3]$ and their suggested assignments.

Raman 100 K		Assignment
cm^{-1}	%	
1583	2.3	asym. str. COO^-
1565	2.5	asym. str. COO^-
1529	1.8	asym. str. COO^-
1470	6.3	δ [R]
1456	19.2	ω (R)
1450	28.1	ω (R)
1380	100.0	r (COO^-)
1373	4.7	δ[R]
1368	26.5	δ[R]
1359	9.4	sym. str. COO^-
1353	18.3	sym. str. COO^-
1348	40.9	C-O stretching
1213	39.1	δ[N-H]
1190	4.8	δ[R]
1133	9.8	δ[C-H]
1116	9.7	δ[C-H]
1092	6.1	δ[C-H]
1065	3.9	Rocking (COO^-)
1060	5.3	Rocking (COO^-)
912	3.1	C-H bends out of plane
901	5.6	C-H bends out of plane
882	3.3	ω(C-H)
872	2.5	ω(C-H)
864	2.1	ω(C-H)
845	1.6	ω(C-H)
798	12.5	COO^- deformation
787	11.4	COO^- deformation