

## SrMGe<sub>2</sub>O<sub>6</sub> (M=Mn, Co): a new family of pyroxene compounds displaying multiferroicity

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Table S1. Agreement factors and refined structural parameters for SrMnGe<sub>2</sub>O<sub>6</sub> at 300 K.

Name	Method	Position	x	y	z	B(Å <sup>2</sup> )
Sr	XSCD	4e	0.0	0.30818(3)	0.25	0.645(6)
	NPD	4e	0.0	0.3094(6)	0.25	0.9(1)
Mn	XSCD	4e	0.0	0.90713(5)	0.25	0.524(11)
	NPD	4e	0.0	0.905(1)	0.25	0.3(2)
Ge	XSCD	8f	0.28249(3)	0.09515(3)	0.21800(5)	0.410(6)
	NPD	8f	0.2820(3)	0.0965(3)	0.2201(6)	0.30(6)
O1	XSCD	8f	0.1110(2)	0.0870(2)	0.1388(4)	0.58(4)
	NPD	8f	0.11109(4)	0.0828(5)	0.1394(8)	0.72(8)
O2	XSCD	8f	0.3574(2)	0.2543(2)	0.3158(4)	0.88(4)
	NPD	8f	0.3559(4)	0.2551(4)	0.3155(8)	0.71(8)
O3	XSCD	8f	0.3534(2)	0.0217(2)	0.9805(3)	0.62(4)
	NPD	8f	0.3530(3)	0.0215(5)	0.9827(9)	0.36(8)
XSCD	A=10.346(2)	B=9.420(2)	C=5.511(1)	Beta=104.669(5)		
NPD	A=10.3511(6)	B=9.4204(5)	C=5.5093(3)	Beta=104.700(2)		
NPD	R <sub>p</sub> =3.19	R <sub>wp</sub> =4.28	R <sub>exp</sub> =0.50	Chi <sup>2</sup> =74.6	R <sub>Bragg</sub> =5.28	

Harmonic atomic displacement parameters (Å<sup>2</sup>) from XSCD for SrMnGe<sub>2</sub>O<sub>6</sub> at 300 K

Atom	U11	U22	U33	U12	U13	U23
Sr	0.01024(15)	0.00625(11)	0.00727(15)	0	0.00084(11)	0
Mn	0.0072(2)	0.00644(19)	0.0059(2)	0	0.00096(18)	0
Ge	0.00489(12)	0.00539(10)	0.00542(13)	-0.00045(7)	0.00154(9)	-0.00039(7)
O1	0.0044(7)	0.0087(6)	0.0089(8)	0.0004(5)	0.0013(6)	0.0003(6)
O2	0.0140(9)	0.0080(7)	0.0107(9)	-0.0050(6)	0.0020(7)	-0.0006(6)
O3	0.0080(8)	0.0095(7)	0.0064(8)	-0.0005(5)	0.0029(6)	-0.0026(5)

Table S2. Agreement factors and refined structural parameters for SrCoGe<sub>2</sub>O<sub>6</sub> at 300 K with NPD using wavelength of 1.28 Å.

Name	Position	x	y	z	B(Å <sup>2</sup> )
Sr	4e	0.0	0.3050(3)	0.25	0.54(5)
Co	4e	0.0	0.9099(9)	0.25	0.9(1)
Ge	8f	0.2820(2)	0.0963(2)	0.2087(3)	0.34(3)
O1	8f	0.1083(2)	0.0825(3)	0.1318(4)	0.40(4)
O2	8f	0.3547(2)	0.2602(2)	0.3055(4)	0.69(4)
O3	8f	0.3553(2)	0.0191(2)	0.9788(4)	0.52(6)
a=10.2560(1)Å    b=9.2970(1)Å    c=5.4701(1)Å    β=105.588(1)°					
R <sub>p</sub> =1.72    R <sub>wp</sub> =2.28    R <sub>exp</sub> =0.30    Chi <sup>2</sup> =55.9    R <sub>Bragg</sub> =2.51					