Table S1. Atomic coordinates and equivalent isotropic displacement parameters of $AM(PO_4)_2$(A=Sr, M=Ti, Sn; A=Ba, M=Sn).

atom	Site	x	y	z	U_{eq}[a]
$SrTi(PO_4)_2$					
Sr1	4e	0	0.19462(7)	3/4	0.00904(17)
Ti1	4c	1/4	1/4	1.00000	0.00449(19)
P1	8f	0.14208(4)	0.73878(13)	0.75611(9)	0.00474(19)
O1	8f	0.16408(11)	0.9629(3)	0.8966(2)	0.0076(4)
O2	8f	0.14674(11)	0.4797(3)	0.8561(2)	0.0075(4)
O3	8f	0.21688(13)	0.7329(4)	0.6923(3)	0.0080(4)
O4	8f	0.04818(13)	0.7784(4)	0.6036(3)	0.0115(4)
$SrSn(PO_4)_2$					
Sr1	4e	1/2	0.30812(8)	1/4	0.00885(12)
Sn1	4c	1/4	1/4	0	0.00423(11)
P1	8f	0.35839(4)	0.76022(11)	0.24157(8)	0.00413(16)
O1	8f	0.34213(10)	0.5367(4)	0.1035(2)	0.0079(4)
O2	8f	0.35673(10)	0.0167(4)	0.1418(2)	0.0078(3)
O3	8f	0.44899(12)	0.7242(3)	0.3982(2)	0.0106(4)
O4	8f	0.27942(12)	0.7676(3)	0.2879(2)	0.0081(4)
$BaSn(PO_4)_2$					
Ba1	2a	0	1.00000	0	0.0114(4)
Sn1	2c	0	1.00000	1/2	0.0053(4)
P1	4i	0.12946(17)	1/2	0.29232(17)	0.0077(5)
O1	8j	0.0210(3)	0.7400(5)	0.3112(3)	0.0108(8)
O2	4i	0.2602(4)	1/2	0.4408(5)	0.0110(9)

O3	4i	0.1872(5)	1/2	0.1162(5)	0.0145(10)

[a] U_{eq} is defined as one third of the trace of the orthogonalized U_{ij} tensor.

Table S2. Selected bond distances (Å) and angles (°) of $AM(PO_4)_2$(A=Sr, M=Ti, Sn; A=Ba, M=Sn).

$SrTi(PO_4)_2$					
Sr1—O4^{i}	2.620(2)	Sr1—O4^{v}	2.741(2)	Ti1—O3^{vi}	1.8710(19)
Sr1—O4^{ii}	2.620(2)	Sr1—O4^{iv}	2.741(2)	Ti1—O3^{ii}	1.8710(19)
Sr1—O2	2.6270(17)	P1—O4	1.504(2)	Ti1—O1^{vii}	1.9631(17)
Sr1—O2^{iii}	2.6270(17)	P1—O3	1.5336(19)	Ti1—O1^{v}	1.9631(17)
Sr1—O1^{iv}	2.6998(17)	P1—O2	1.5506(18)	Ti1—O2	1.9749(17)
Sr1—O1^{v}	2.6998(17)	P1—O1	1.5522(18)	Ti1—O2^{viii}	1.9749(17)
O3^{vi}—Ti1—O3^{ii}	180.000(1)	O3^{ii}—Ti1—O2	88.39(8)	O2—Ti1—O2^{viii}	180.000(1)
O3^{vi}—Ti1—O1^{vii}	88.31(8)	O1^{vii}—Ti1—O2	93.73(7)	O4—P1—O3	114.23(11)
O3^{ii}—Ti1—O1^{vii}	91.69(8)	O1^{v}—Ti1—O2	86.27(7)	O4—P1—O2	110.00(11)
O3^{vi}—Ti1—O1^{v}	91.69(8)	O3^{vi}—Ti1—O2^{viii}	88.39(8)	O3—P1—O2	107.41(10)
O3^{ii}—Ti1—O1^{v}	88.31(8)	O3^{ii}—Ti1—O2^{viii}	91.61(8)	O4—P1—O1	108.76(11)
O1^{vii}—Ti1—O1^{v}	180.000	O1^{vii}—Ti1—O2^{viii}	86.27(7)	O3—P1—O1	107.63(10)
O3^{vi}—Ti1—O2	91.61(8)	O1^{v}—Ti1—O2^{viii}	93.73(7)	O2—P1—O1	108.65(10)

(i) -x, 1-y, 1-z; (ii) x, 1-y, 0.5+z; (iii) -x, y, 1.5-z; (iv) -x, -1+y, 1.5-z; (v) x, -1+y, z; (vi) 0.5-x, -0.5+y, 1.5-z; (vii) 0.5-x, 1.5-y, 2-z; (viii) 0.5-x, 0.5-y, 2-z; (ix) x, 1+y, z; (x) 0.5-x, 0.5+y, 1.5-z.

$SrSn(PO_4)_2$					
Sr1—O3^{i}	2.599(3)	Sr1—O3	2.789(2)	Sn1—O4^{i}	1.983(2)
Sr1—O3^{ii}	2.599(3)	Sr1—O3^{iii}	2.789(2)	Sn1—O4^{vi}	1.983(2)
Sr1—O2	2.640(2)	P1—O3	1.502(2)	Sn1—O1^{vii}	2.045(2)
Sr1—O2^{iii}	2.640(2)	P1—O4	1.519(2)	Sn1—O1	2.045(2)

Sr1—O1^{iii}	2.654(2)	P1—O1	1.557(2)	Sn1—O2^{vii}	2.047(2)
Sr1—O1	2.654(2)	P1—O2^{viii}	1.558(2)	Sn1—O2	2.047(2)
O4^{i}—Sn1—O4^{vi}	180.00(13)	O4^{vi}—Sn1—O2^{vii}	88.61(8)	O2^{vii}—Sn1—O2	180.00(11)
O4^{i}—Sn1—O1^{vii}	92.07(7)	O1^{vii}—Sn1—O2^{vii}	83.79(9)	O3—P1—O4	117.10(12)
O4^{vi}—Sn1—O1^{vii}	87.93(7)	O1—Sn1—O2^{vii}	96.21(9)	O3—P1—O1	108.02(10)
O4^{i}—Sn1—O1	87.93(7)	O4^{i}—Sn1—O2	88.61(8)	O4—P1—O1	107.34(10)
O4^{vi}—Sn1—O1	92.07(7)	O4^{vi}—Sn1—O2	91.39(8)	O3—P1—O2^{viii}	109.25(10)
O1^{vii}—Sn1—O1	180.00(8)	O1^{vii}—Sn1—O2	96.21(9)	O4—P1—O2^{viii}	106.55(9)
O4^{i}—Sn1—O2^{vii}	91.39(8)	O1—Sn1—O2	83.79(9)	O1—P1—O2^{viii}	108.29(11)

(i) x, 1-y, -0.5+z; (ii) 1-x, 1-y, 1-z; (iii) 1-x, y, 0.5-z; (iv) x, -1+y, z; (v) 1-x, -1+y, 0.5-z; (vi) 0.5-x, -0.5+y, 0.5-z; (vii) 0.5-x, 0.5-y, -z; (viii) x, 1+y, z; (ix) 0.5-x, 0.5+y, 0.5-z.

$BaSn(PO_4)_2$

Ba1—O3^{i}	2.796(4)	Ba1—O3^{vii}	3.140(2)	Sn1—O1^{x}	2.038(3)
Ba1—O3^{ii}	2.796(4)	Ba1—O3	3.140(2)	Sn1—O1^{iv}	2.038(3)
Ba1—O1^{iii}	2.803(3)	Ba1—O3^{v}	3.140(2)	P1—O3	1.504(4)
Ba1—O1^{iv}	2.803(3)	Sn1—O2^{i}	1.988(4)	P1—O2	1.525(4)
Ba1—O1	2.803(3)	Sn1—O2^{viii}	1.988(4)	P1—O1^{xii}	1.556(3)
Ba1—O1^{v}	2.803(3)	Sn1—O1	2.038(3)	P1—O1	1.556(3)
Ba1—O3^{vi}	3.140(2)	Sn1—O1^{ix}	2.038(3)		
O2^{i}—Sn1—O2^{viii}	180.000	O2^{viii}—Sn1—O1^{x}	88.17(11)	O1^{x}—Sn1—O1^{iv}	180.000
O2^{i}—Sn1—O1	88.17(11)	O1—Sn1—O1^{x}	95.96(15)	O3—P1—O2	117.1(2)
O2^{viii}—Sn1—O1	91.83(11)	O1^{ix}—Sn1—O1^{x}	84.04(15)	O3—P1—O1^{xii}	108.28(15)
O2^{i}—Sn1—O1^{ix}	91.83(11)	O2^{i}—Sn1—O1^{iv}	88.17(11)	O2—P1—O1^{xii}	107.44(14)

$O2^{viii}$—Sn1—$O1^{ix}$	88.17(11)	$O2^{viii}$—Sn1—$O1^{iv}$	91.83(11)	O3—P1—O1	108.28(15)
O1—Sn1—$O1^{ix}$	180.000(1)	O1—Sn1—$O1^{iv}$	84.04(15)	O2—P1—O1	107.44(14)
$O2^{i}$—Sn1—$O1^{x}$	91.83(11)	$O1^{ix}$—Sn1—$O1^{iv}$	95.96(15)	$O1^{xii}$—P1—O1	108.0(2)

(i) -0.5+x, 0.5+y, z; (ii) 0.5-x, 1.5-y, -z; (iii) -x, y, -z; (iv) x, 2-y, z; (v) -x, 2-y, -z; (vi) x, 1+y, z; (vii) -x, 1-y, -z; (viii) 0.5-x, 1.5-y, 1-z; (ix) -x, 2-y, 1-z; (x) -x, y, 1-z; (xi) x, y, 1+z; (xii) x, 1-y, z; (xiii) x, -1+y, z; (xiv) 0.5+x, -0.5+y, z.

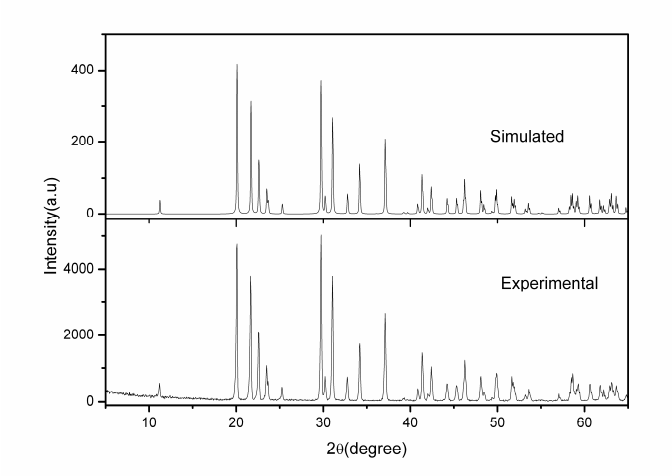

Figure S1. Experimental and simulated X-ray powder diffraction patterns of $BaSn(PO_4)_2$.

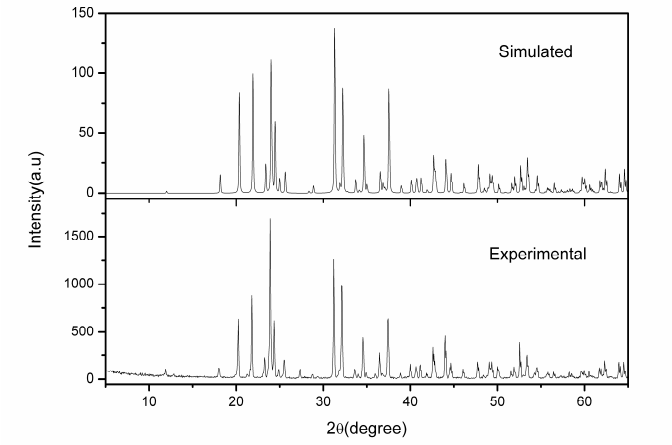

Figure S2. Experimental and simulated X-ray powder diffraction patterns of $SrTi(PO_4)_2$.

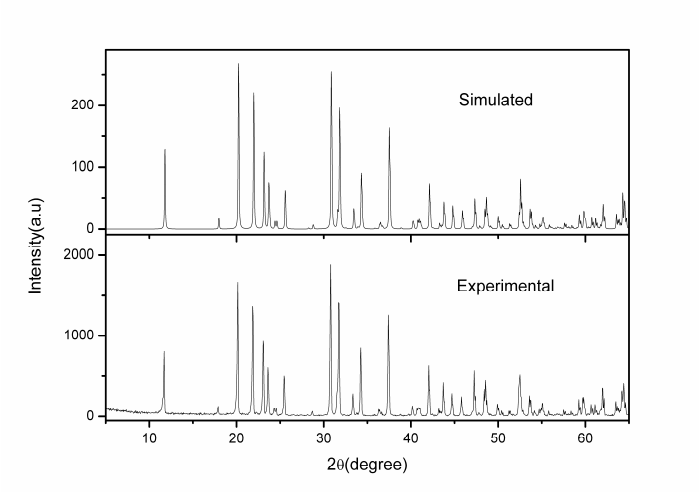

Figure S3. Experimental and simulated X-ray powder diffraction patterns of $SrSn(PO_4)_2$.