Supporting Materials

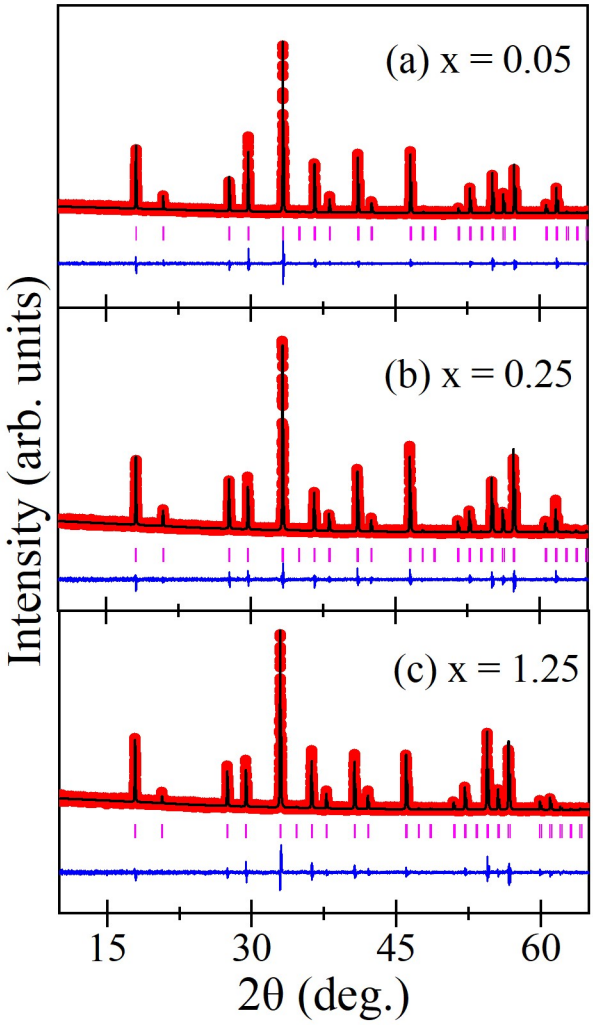

Figure S1. Observed (red circle), calculated (black line) and difference (blue line) profiles obtained from Rietveld refinement of $Y_3Al_{5-x}Sc_xO_{12}$ garnet: (a) x = 0.05, (b) x = 0.25, and (c) x = 1.25 using I*a-3d* space group. The vertical line (pink) indicates the Bragg peak positions.

Table S1. Crystallographic parameters obtained from Rietveld refinement for different compositions of $Y_3Al_{5-x}Sc_xO_{12}$ garnet.

$Y_3Al_{5-x}Sc_xO_{12}$	x = 0.05	x = 0.25	x = 1.25
Crystal Structure	Cubic		
Unit Cell	I*a-3d*		
Lattice Constant			
a = b = c (Å)	12.0138(7)	12.0263(9)	12.1454(5)
V $(Å)^3$	1733.98(8)	1739.40(4)	1791.57(5)
Atomic Coordinates			
Y^{3+} **24c**			
x	0.1250	0.1250	0.1250
y	0.0000	0.0000	0.0000
z	0.2500	0.2500	0.2500
Al^{3+}/Sc^{3+} **16a**			
x	0.0000	0.0000	0.0000
y	0.0000	0.0000	0.0000
z	0.0000	0.0000	0.0000
Al^{3+}/Sc^{3+} **24d**			
x	0.3750	0.3750	0.3750
y	0.0000	0.0000	0.0000
z	0.2500	0.2500	0.2500
O^{2-} **96h**			
x	0.1810	0.3130	0.2481
y	0.0522	0.0584	0.0543
z	0.0474	0.0497	0.0482

Bond Distance			
Y_1-O_1 (Å)	2.312	2.321	2.426
Al/Sc_1-O_1 (Å)	1.941	1.943	1.992
Y_1-Al/Sc_1 (Å)	3.359	3.362	3.393
Y_1-Y_1 (Å)	3.680	3.683	3.723
Goodness of refinement fit			
χ^2	1.40	1.23	2.82