

Table S1. Unit-cell parameters of ZL/0.5FL, ZL/1FL, ZL/1.5FL samples at the investigated pressures in S.O and ZL/0.5FL, ZL/1FL in m.e.w. respectively (* Values taken from Gigli et al. 2014)

P (GPa)	ZL/0.5FL (s.o.)		
	<i>a</i>(Å)	<i>c</i>(Å)	<i>V</i>(Å³)
<i>Pamb</i>*	18.3860(6)	7.5228(3)	2202.4(1)
0.52	18.3898(3)	7.4942(1)	2184.8(1)
1.34	18.2680(7)	7.4430(3)	2151.1(1)
1.60	18.2451(9)	7.4261(4)	2140.8(2)
2.09	18.1813(9)	7.3865(3)	2114.5(1)
2.45	18.1835(6)	7.3666(3)	2109.3(4)
2.96	18.1085(6)	7.3339(3)	2082.7(3)
3.67	18.0319(4)	7.2885(3)	2052.3(1)
4.01	18.006(4)	7.2713(1)	2041.8(1)
4.53	17.941(4)	7.2331(1)	2016.4(1)
5.26	17.87(3)	7.1951(5)	1990.3(3)
5.80	17.845(7)	7.1811(3)	1980.5(3)
4.51 (rev)	17.911(5)	7.2186(1)	2005.5(1)
2.77(rev)	18.083(7)	7.3086(4)	2069.7(7)
<i>P amb (rev)</i>	18.4325(7)	7.5493(3)	2221.3(1)
	ZL/1.0FL (s.o.)		
<i>Pamb</i>*	18.3940(6)	7.5203(3)	2203.5(1)
0.45	18.3722(6)	7.4936(2)	2190.5(1)
1.02	18.3291(1)	7.4617(4)	2170.9(2)
1.45	18.3066(9)	7.4419(4)	2159.9(2)
2.01	18.2489(1)	7.4070(4)	2136.2(1)
2.52	18.2163(3)	7.3776(3)	2120.1(1)
3.06	18.1511(4)	7.3425(3)	2095.1(2)
3.69	18.1042(4)	7.3126(6)	2075.7(1)
4.19	18.0541(5)	7.2834(6)	2055.2(1)
4.80	17.9951(5)	7.2508(6)	2033.5(3)
5.53	17.9430(7)	7.2199(2)	2013.2(4)
6.05	17.8921(4)	7.1928(2)	1994.2(7)
4.56 (rev)	17.9532(3)	7.2286(2)	2017.7(1)
2.94(rev)	18.0730(4)	7.3008(4)	2065.2(2)
<i>P amb (rev)</i>	18.3968(9)	7.5184(4)	2203.6(1)
	ZL/1.5FL (s.o.)		
<i>Pamb</i>*	18.4211(6)	7.5117(3)	2207.5(2)
0.42	18.4373(4)	7.4924(4)	2205.7(2)
1.01	18.4082(7)	7.4687(5)	2191.8(2)
1.46	18.3620(7)	7.4418(1)	2173.1(1)
1.95	18.3320(1)	7.4191(1)	2159.3(2)
2.41	18.2811(1)	7.3905(1)	2139.1(2)
2.96	18.2294(6)	7.3596(1)	2118.0(3)
3.55	18.1581(4)	7.3225(5)	2090.9(2)
4.25	18.1076(3)	7.2933(5)	2070.8(3)
4.84	18.0681(3)	7.2693(3)	2055.2(4)

5.51	18.0058(3)	7.2357(1)	2031.5(2)
5.29(rev)	17.9671(3)	7.2136(3)	2016.7(1)
3.13(rev)	18.1553(2)	7.3092(4)	2086.5(7)
Pamb (rev)	18.4650(5)	7.5171(1)	2219.6(3)

Table S2. Refined atomic potitions, occupancy factors and displacement parameters of ZL/0.5FL and ZL/1.0FL in S.O. at 2 GPa and upon decompression (P amb (rev

ZL/0.5FL 2GPa					
Atom	x/a	y/b	z/c	F	Uiso
T1	0.0916(5)	0.3557(4)	0.5	1	0.022(1)
T2	0.1659(3)	0.5010(3)	0.2128(6)	1	0.022(1)
O1	0	0.267(1)	0.5	1	0.045(2)
O2	0.1671(7)	0.334(1)	0.5	1	0.045(2)
O3	0.2640(4)	0.5279(9)	0.245(2)	1	0.045(2)
O4	0.1027(6)	0.4137(5)	0.323(1)	1	0.045(2)
O5	0.4355(2)	0.8709(5)	0.274(2)	1	0.045(2)
O6	0.145(1)	0.4735(9)	0	1	0.045(2)
KB	0.3333	0.6666	0.5	1	0.095(2)
KC	0.5	0	0.5	0.98(1)	0.095(2)
KD	0.2933(9)	0	0	0.81(1)	0.095(2)
OFL	0.2806(4)	0.1403(2)	0	0.08	0.175
C1	0.025(3)	0.0124(1)	0.3960(6)	0.08	0.175
C2	0.1033(3)	0.0517(1)	0.4768(3)	0.08	0.175
C3	0.1670(2)	0.0835(1)	0.3481(1)	0.08	0.175
C4	0.1520(3)	0.0760(1)	0.1616(2)	0.08	0.175
C5	0.0675(3)	0.0337(1)	0.0975(2)	0.08	0.175
C6	0	0	0.2155(6)	0.5	0.175
C7	0.205(4)	0.1026(2)	0	0.08	0.175
WI	0.2806(4)	0.1403(2)	0	0.56(2)	0.13(1)
WJ	0.163(1)	0.0815(6)	0.3276(3)	0.55(1)	0.13(1)
WH	0.150(3)	0	0.175(7)	0.211(3)	0.13(1)
ZL/0.5FL Pamb (rev)					
	x/a	y/b	z/c	F	Uiso
T1	0.0922(4)	0.3565(4)	0.5	1.000(0)	0.025(2)
T2	0.1651(4)	0.4984(4)	0.2069(6)	1.000(0)	0.025(2)
O1	0	0.271(1)	0.5	1.000(0)	0.050(3)
O2	0.1656(6)	0.331(1)	0.5	1.000(0)	0.050(3)
O3	0.2633(4)	0.5267(8)	0.243(2)	1.000(0)	0.050(3)
O4	0.1007(6)	0.4120(6)	0.3227(9)	1.000(0)	0.050(3)
O5	0.4257(3)	0.8514(7)	0.268(2)	1.000(0)	0.050(3)
O6	0.1452(9)	0.4794(9)	0	1.000(0)	0.050(3)
KB	0.3333	0.6666	0.5	1.000(0)	0.098(1)
KC	0.5	0	0.5	0.92(1)	0.098(1)
KD	0.2975(6)	0	0	0.85(1)	0.098(1)
OFL	0.2780(2)	0.13902(9)	0	0.08	0.175

C1	0.0230(1)	0.01153(6)	0.3846(3)	0.08	0.175
C2	0.0992(1)	0.04965(6)	0.4672(2)	0.08	0.175
C3	0.16309(9)	0.08155(4)	0.34620(4)	0.08	0.175
C4	0.1506(1)	0.07532(7)	0.15932(7)	0.08	0.175
C5	0.0677(1)	0.03386(7)	0.09504(9)	0.08	0.175
C6	0	0	0.2071(3)	0.5	0.175
C7	0.2035(2)	0.10177(8)	0	0.08	0.175
WI	0.2780(2)	0.13902(9)	0	0.41(2)	0.13(1)
WJ	0.16309(9)	0.08155(4)	0.34620(4)	0.561(7)	0.13(1)
WH	0.157(3)	0	0.113(8)	0.271(7)	0.13(1)

ZL/IFL 2GPa

	x/a	y/b	z/c	F	Uiso
T1	0.0926(6)	0.3564(4)	0.5	1	0.027(2)
T2	0.1667(4)	0.4977(4)	0.2146(6)	1	0.027(2)
O1	0	0.271(1)	0.5	1	0.037(4)
O2	0.1632(7)	0.326(1)	0.5	1	0.037(4)
O3	0.2683(4)	0.5366(9)	0.253(2)	1	0.037(4)
O4	0.0953(7)	0.4148(5)	0.328(1)	1	0.037(4)
O5	0.4262(3)	0.8524(5)	0.261(3)	1	0.037(4)
O6	0.142(1)	0.480(1)	0	1	0.037(4)
KB	0.3333	0.6666	0.5	1	0.100(4)
KD	0.309(1)	0	0	0.824(1)	0.100(4)
KC	0.5	0	0.5	1	0.100(4)
OFL	0.2876(6)	0.1438(3)	0	0.158	0.197
C1	0.0405(3)	0.0203(1)	0.3897(7)	0.158	0.197
C2	0.122(2)	0.0610(8)	0.453(9)	0.158	0.197
C3	0.185(4)	0.092(2)	0.323(4)	0.158	0.197
C4	0.1515(4)	0.0757(2)	0.1484(3)	0.158	0.197
C5	0.0651(4)	0.0326(2)	0.0974(3)	0.158	0.197
C6	0	0	0.2231(8)	1	0.197
C7	0.2119(6)	0.1060(3)	0	0.158	0.197
WI	0.261(2)	0.130(1)	0	0.46(3)	0.06(2)
WJ	0.1687(1)	0.084(7)	0.2715(3)	0.45(2)	0.06(2)

ZL/IFL P_{amb} (rev)

	x/a	y/b	z/c	F	Uiso
T1	0.0925(4)	0.3558(3)	0.5	1	0.024(2)
T2	0.1661(2)	0.4961(2)	0.2118(4)	1	0.024(2)
O1	0	0.2718(8)	0.5	1	0.031(4)
O2	0.1641(5)	0.328(1)	0.5	1	0.031(3)
O3	0.2670(3)	0.5340(7)	0.2314(2)	1	0.031(3)
O4	0.1011(4)	0.4166(4)	0.3337(8)	1	0.031(3)
O5	0.4180(2)	0.8360(4)	0.253(2)	1	0.031(3)
O6	0.1445(8)	0.4864(8)	0	1	0.031(3)
KB	0.3333	0.6666	0.5	1	0.059(3)
KD	0.305(2)	0	0	0.87(2)	0.059(3)
KC	0.5	0	0.5	0.94(4)	0.059(3)
OFL	0.2783(2)	0.139(1)	0	0.158	0.197

<i>C1</i>	0.0248(2)	0.01240(8)	0.3886(4)	0.158	0.197
<i>C2</i>	0.1022(2)	0.05111(10)	0.4685(2)	0.158	0.197
<i>C3</i>	0.1652(1)	0.08258(7)	0.3425(3)	0.158	0.197
<i>C4</i>	0.1507(2)	0.07537(9)	0.1589(1)	0.158	0.197
<i>C5</i>	0.0673(2)	0.03364(9)	0.0958(1)	0.158	0.197
<i>C6</i>	0	0	0.2113(4)	1	0.197
<i>C7</i>	0.2036(2)	0.1018(1)	0	0.158	0.197
<i>WI</i>	0.248(6)	0.124(3)	0	0.64(1)	0.08(1)
<i>WJ</i>	0.166(4)	0.083(2)	0.297(9)	0.51(6)	0.08(1)

Table S3. Extraframework bond distances < 3.2 Å for the ZL/0.5FL, ZL/1.0FL composites in S.O. @ P_{amb} [From Gigli et al 2014) , 2 GPa and upon decompression (P_{amb} (rev))]. Inter molecular distance are not shown

		ZL/0.5FL				ZL/1FL			
		2 GPa		P _{amb} (rev)		2 GPa		P _{amb} (rev)	
<i>T1-</i>	<i>O1</i>	1.641(6)		1.639(9)		1.625(6)		1.623(1)	
	<i>O2</i>	1.605(5)		1.637(6)		1.633(5)		1.631(1)	
	<i>O4</i>	1.630(4)	x2	1.644(6)	x2	1.643(4)	x2	1.631(7)	x2
<i>T2-</i>	<i>O3</i>	1.613(6)		1.638(8)		1.645(5)		1.631(1)	
	<i>O4</i>	1.635(6)		1.679(9)		1.651(5)		1.631(1)	
	<i>O5</i>	1.662(8)		1.640(7)		1.628(8)		1.629(6)	
	<i>O6</i>	1.635(4)		1.603(4)		1.639(4)		1.630(9)	
<i>KB-</i>	<i>O3</i>	2.88(1)	x6	2.958(14)	x6	2.750(2)	x6	2.896(3)	x6
<i>KC-</i>	<i>O5</i>	2.63(1)	x4	2.947(13)	x4	2.93(2)	x4	2.994(3)	x4
	<i>O4</i>					3.12(1)	x8	3.154(4)	x8
<i>KD-</i>	<i>O4</i>	3.14(1)	x4	3.150(4)	x4	3.05(1)	x4	3.11(1)	x4
	<i>O6</i>	3.01(2)	x2	3.072(7)	x2	2.88(2)	x2	2.94(2)	x2
	<i>OFL</i>	2.673(9)	x2	2.759(6)	x2	2.85(1)	x2	2.84(2)	x2
	<i>WI</i>	2.673(9)	x2	2.759(6)	x2	2.98(2)	x2	2.97(4)	x2
	<i>WH</i>	2.90(1)	x2	2.73(6)	x2				
<i>OFL- KD</i>		2.673(9)	x2	2.759(3)	x2	2.85(1)	x2	2.82(7)	x2
<i>C3-</i>	<i>O1</i>	3.12(1)	x2			3.12(2)	x2	2.78(2)	x2
	<i>O2</i>	2.821(3)		2.93(2)		2.59(2)			
<i>WI-</i>	<i>KD</i>	2.673(9)	x2	2.759(6)	x2	2.926(8)	x2	2.93(3)	x2
	<i>WJ</i>	3.05(1)		3.19(3)		2.487(3)	x2	2.59(8)	x2
	<i>WH</i>	2.760(5)	x2	2.56(3)	x2				

WJ-	O1	3.19(2)	x2						
	O2	2.98(2)	x2	2.925(1)	x2	3.01(3)	x2	2.93(6)	x2
	C3	2.60(2)	x2	2.60(1)	x2	2.78(2)	x2	2.91(4)	x2
	C4	2.77(2)	x2	2.88(2)	x2	2.70(2)	x2	2.74(4)	X2
	C2	2.50(2)	x2	2.45(1)	x2	2.74(1)	x2	2.65(5)	X2
	C5	2.80(2)	x2	2.95(3)	x2	2.66(3)	x2	2.76(6)	X2
	C6	2.69(2)		2.81(1)		2.69(2)		2.73(6)	
	C1	2.82(2)	x2	2.82(2)	x2	2.56(2)	x2	2.57(6)	x2
	WI	3.05(1)		3.194(1)	-	2.49(3)		2.65(6)	
	WJ	2.56(2)	x2	2.60(1)	x2	2.67(2)	x2	2.59(8)	x2
WH-	KD	2.90(5)		2.73(6)					
	O1	3.20(5)							
	C6	2.75(5)		2.9569(5)					
	WI	2.78(3)	x2	2.56(3)	x2				
	WH	2.73(5)	x2	2.89(6)	x2				