

Supplemental Material

Ground state tuning of the metal-insulator transition by compositional variations in $\text{BaIr}_{1-x}\text{Ru}_x\text{O}_3$ ($0 \leq x \leq 1$)

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The atomic parameters for $\text{BaIr}_{1-x}\text{Ru}_x\text{O}_3$ are given in **SM-Tab.1~4**.

SM-Tab.1 Atomic parameters for $x = 0$ at $T = 90$ K.

Atom	Wyck.	Site	x/a	y/b	z/c
Ba1	4i	m	0.7819(1)	0	0.24840
Ba2	4i	m	0.3694(1)	0	0.07200
Ba3	4i	m	0.1512(1)	0	0.42200
Ir1	4i	m	0.08870	0	0.17630
Ir2	2a	2/m	0	0	0
Ir3	4i	m	0.47130	0	0.32180
Ir4	2d	2/m	1/2	0	1/2
O1	4i	m	0.2957(8)	0	0.2261(5)
O2	8j	1	0.0592(6)	0.2454(10)	0.2633(4)
O3	4i	m	0.8929(8)	0	0.0993(6)
O4	8j	1	0.1171(5)	0.2359(10)	0.0825(4)
O5	8j	1	0.4054(6)	0.2296(10)	0.4031(4)
O6	4i	m	0.6424(8)	0	0.4245(5)

SM-Tab.2 Atomic parameters for $x = 0.10$ at $T = 90$ K.

Atom	Wyck.	Site	x/a	y/b	z/c
BA1	4i	m	0.77744	0	0.24894
BA2	4i	m	0.36832	0	0.07284
BA3	4i	m	0.14969	0	0.42300
IR1	4i	m	0.08478	0	0.17619
RU1	4i	m	0.08478	0	0.17619
IR2	2a	2/m	0	0	0
RU2	2a	2/m	0	0	0
IR3	4i	m	0.46754	0	0.32296
RU3	4i	m	0.46754	0	0.32296
IR4	2d	2/m	1/2	0	1/2
RU4	2d	2/m	1/2	0	1/2
O1	4i	m	0.29133	0	0.22786
O3	4i	m	0.89054	0	0.09867
O2	8j	1	0.05232	0.24599	0.26188
O4	8j	1	0.11656	0.23571	0.08349
O5	8j	1	0.40336	0.23075	0.40402
O6	4i	m	0.64279	0	0.42328

SM-Tab.3 Atomic parameters for $x = 0.63$ at $T = 90$ K.

Atom	Wyck.	Site	x/a	y/b	z/c
BA1	4i	m	0.76185	0	0.24984
BA2	4i	m	0.36372	0	0.07639
BA3	4i	m	0.14491	0	0.42317
IR1	4i	m	0.07030	0	0.17506
RU1	4i	m	0.07030	0	0.17506
IR2	2a	2/m	0	0	0
RU2	2a	2/m	0	0	0
IR3	4i	m	0.45374	0	0.32498
RU3	4i	m	0.45374	0	0.32498
IR4	2d	2/m	1/2	0	1/2
RU4	2d	2/m	1/2	0	1/2
O1	4i	m	0.26862	0	0.24102
O3	4i	m	0.87969	0	0.09110
O2	8j	1	0.02084	0.25038	0.25469
O4	8j	1	0.11163	0.23453	0.08610
O5	8j	1	0.39703	0.23661	0.40873
O6	4i	m	0.63532	0	0.41753

SM-Tab.4 Atomic parameters for $x = 1$ at $T = 90$ K.

Atom	Wyck.	Site	x/a	y/b	z/c
Ba1	3a	-3m	0	0	0
Ba2	6c	3m	0	0	0.2182(1)
Ru1	3b	-3m	0	0	1/2
Ru2	6c	3m	0	0	0.3830(1)
O1	18h	.m	0.314(2)	0.1568(10)	0.4411(4)
O2	9e	.2/m	1/2	0	0