Supporting Information

Combinatorial synthesis and ionic conductivity of amorphous oxynitrides in a pseudo-ternary Li_3PO_4-Li_4SiO_4-$LiAlO_2$ system

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Supporting Information for Reviewers

Table S1. Thickness of LiPON, LiSiON, and LiAlON single films at different positions on the Pt/Ti substrate and the composition ratio of each element estimated from the deposition rates of the single films.

Position	Film thickness [nm]			Atomic composition [%]		
	LiPON	LiSiON	LiAlON	LiPON	LiSiON	LiAlON
1	112.7	60.0	45.0	44.0	23.1	32.9
2	105.4	68.8	42.8	41.6	26.8	31.7
3	113.5	71.3	41.5	43.4	26.9	29.7
4	122.1	67.4	43.6	45.2	24.6	30.2
5	120.5	62.0	46.3	44.9	22.8	32.3
6	111.0	60.1	47.0	43.0	22.9	34.1
7	104.1	63.2	45.6	41.3	24.8	33.9
8	98.2	76.5	40.1	39.5	30.3	30.2
9	105.5	80.9	38.3	41.0	31.0	27.9
10	115.2	81.5	38.1	43.1	30.1	26.8
11	126.2	78.0	39.3	45.6	27.8	26.6
12	133.5	71.8	42.2	47.1	25.0	27.9
13	134.5	65.5	45.6	47.3	22.7	30.0
14	128.7	60.7	47.9	46.3	21.5	32.2
15	118.5	57.8	49.2	44.3	21.3	34.5
16	108.1	57.4	49.4	42.0	22.0	36.0
17	100.1	59.5	48.2	40.2	23.6	36.2
18	95.4	63.9	46.2	38.9	25.7	35.3
19	94.7	69.8	43.4	38.7	28.1	33.2
20	91.2	83.7	37.8	37.3	33.7	29.0
21	101.6	90.9	36.0	39.3	34.6	26.1
22	116.2	91.7	35.8	42.5	33.0	24.5
23	133.3	85.5	37.2	46.4	29.3	24.3
24	144.8	75.6	40.6	49.0	25.2	25.8
25	146.1	65.8	46.0	49.2	21.8	29.0
26	136.3	58.7	49.4	47.5	20.2	32.3
27	120.5	54.8	51.7	44.4	19.9	35.7
28	104.9	54.3	51.9	41.0	20.9	38.0
29	93.6	57.2	49.9	38.4	23.2	38.4
30	87.3	63.8	46.6	36.8	26.5	36.8
31	86.6	72.9	42.2	36.4	30.3	33.3
32	84.7	90.4	36.0	35.1	36.9	28.0
33	90.2	96.9	34.7	36.0	38.1	25.9
34	97.5	100.8	33.9	37.4	38.2	24.4
35	106.1	102.8	33.5	39.3	37.5	23.2
36	116.7	101.9	33.7	41.6	35.9	22.5
37	128.8	98.4	34.3	44.4	33.4	22.2
38	140.2	92.8	35.4	47.0	30.7	22.3
39	150.2	86.1	37.1	49.3	27.9	22.8
40	156.3	78.6	39.3	50.9	25.2	23.9
41	159.3	71.5	42.6	51.4	22.8	25.8
42	158.0	65.3	46.3	51.1	20.8	28.1
43	152.6	60.2	48.8	50.3	19.6	30.1
44	143.8	56.1	51.1	48.8	18.7	32.5
45	133.5	53.5	53.2	46.7	18.5	34.9
46	121.8	51.6	54.7	44.3	18.5	37.2
47	110.8	50.9	55.3	41.9	19.0	39.2
48	101.3	51.1	54.9	39.8	19.8	40.4
49	93.3	52.4	53.6	38.0	21.0	40.9
50	86.9	54.6	51.6	36.6	22.7	40.7
51	83.0	58.2	49.4	35.6	24.6	39.7
52	80.0	62.9	47.0	34.8	26.9	38.3
53	78.9	68.4	44.4	34.4	29.4	36.3
54	79.3	75.3	40.8	34.5	32.3	33.2
55	81.2	83.1	37.8	34.7	35.0	30.3
56	78.9	95.2	34.4	33.3	39.6	27.2
57	85.0	103.1	32.9	34.2	41.0	24.8
58	93.4	109.1	31.9	35.8	41.3	22.9
59	103.7	112.5	31.4	37.9	40.6	21.5
60	116.5	110.9	31.6	40.9	38.4	20.8
61	131.7	105.3	32.4	44.5	35.1	20.5
62	146.5	98.4	33.7	47.8	31.6	20.6
63	158.7	89.0	35.7	50.7	28.0	21.3
64	167.9	79.6	38.2	52.8	24.7	22.5
65	173.1	70.7	41.8	53.9	21.7	24.4
66	170.7	63.4	46.4	53.3	19.5	27.2
67	162.0	57.3	49.6	52.0	18.1	29.9
68	151.4	52.6	52.8	50.1	17.2	32.7
69	136.9	49.3	55.8	47.2	16.8	36.0
70	122.5	47.8	58.0	44.0	16.9	39.1
71	108.8	47.0	58.9	41.0	17.4	41.6
72	97.5	47.2	58.3	38.5	18.4	43.1

73	88.2	48.7	56.3	36.5	19.9	43.6
74	81.0	51.3	53.4	35.0	21.8	43.2
75	75.9	55.2	50.4	33.8	24.2	42.0
76	73.6	60.7	47.4	33.1	26.9	39.9
77	72.3	67.4	43.9	32.7	30.1	37.2
78	72.7	75.7	39.4	32.9	33.8	33.4
79	75.0	85.6	36.5	32.9	37.0	30.0
80	73.2	103.2	32.8	31.0	43.0	26.0
81	79.8	114.0	31.0	31.9	44.9	23.2
82	89.0	123.7	29.8	33.4	45.7	20.9
83	100.5	127.5	29.4	35.7	44.7	19.6
84	115.6	126.0	29.6	39.2	42.1	18.8
85	134.0	117.5	30.4	43.7	37.7	18.6
86	152.1	107.2	32.0	47.9	33.3	18.9
87	168.1	95.2	34.2	51.6	28.8	19.7
88	182.4	82.9	37.2	54.7	24.5	20.9
89	188.0	72.1	40.9	56.0	21.2	22.8
90	185.8	63.4	46.5	55.4	18.6	26.0
91	173.2	56.2	50.5	53.6	17.1	29.3
92	158.1	51.1	54.5	50.9	16.2	32.9
93	140.3	47.9	58.6	47.2	15.9	36.9
94	122.2	45.6	61.3	43.3	15.9	40.7
95	106.3	44.7	61.9	39.9	16.5	43.6
96	93.5	45.0	61.5	36.9	17.5	45.5
97	82.9	46.5	59.3	34.6	19.1	46.3
98	75.3	49.6	55.3	33.0	21.5	45.5
99	70.7	54.1	51.3	32.1	24.2	43.7
100	67.3	60.4	47.6	31.2	27.5	41.3
101	65.9	68.2	43.0	30.8	31.4	37.7
102	66.4	78.4	38.3	30.8	35.9	33.3
103	68.5	90.9	35.3	30.6	40.0	29.5
104	67.3	107.5	31.1	29.1	45.8	25.1
105	74.6	123.6	29.1	29.7	48.5	21.7
106	84.4	134.1	27.9	31.4	49.2	19.4
107	97.1	136.5	27.4	34.3	47.5	18.1
108	113.8	136.4	27.6	37.9	44.8	17.2
109	134.8	128.0	28.5	42.9	40.1	17.0
110	155.3	110.2	30.2	48.5	33.9	17.6
111	178.5	97.9	32.7	53.1	28.7	18.2
112	193.8	83.8	36.0	56.3	24.0	19.6
113	197.2	71.4	40.1	57.5	20.5	21.9
114	197.1	61.3	46.4	57.2	17.5	25.3
115	184.9	54.3	51.1	55.3	16.0	28.7
116	159.2	48.7	52.0	52.3	15.8	32.0
117	141.4	44.7	61.1	47.1	14.7	38.2
118	121.1	42.4	61.8	43.4	15.0	41.6
119	103.2	41.5	71.1	37.2	14.7	48.0
120	88.5	41.8	61.6	36.1	16.8	47.1
121	78.4	43.5	61.5	33.1	18.1	48.7
122	70.3	46.6	56.8	31.6	20.6	47.8
123	64.6	51.6	52.0	30.3	23.9	45.8
124	61.3	58.4	47.7	29.4	27.7	42.9
125	59.9	67.2	41.6	29.3	32.5	38.2
126	60.4	78.8	37.3	29.1	37.4	33.6
127	62.9	93.3	33.9	28.8	42.1	29.1