

Supplementary Materials

# Improving the Ionic Conductivity of the LLZO–LZO Thin Film through Indium Doping

Zongkai Yan <sup>1</sup>, Yu Song <sup>1</sup>, Shuai Wu <sup>2</sup>, Yongmin Wu <sup>3</sup>, Shipai Song <sup>1</sup>, Xinyu Wang <sup>1</sup>, Yanlin Zhu <sup>4</sup>, Junsong Chen <sup>1</sup>, Rui Guo <sup>3</sup> and Yong Xiang <sup>1,\*</sup>

<sup>1</sup> School of Materials and Energy, University of Electronic Science and Technology of China, Chengdu 611731, China; [yanzongkai@uestc.edu.cn](mailto:yanzongkai@uestc.edu.cn) (Z.Y.); [201822030311@std.uestc.edu.cn](mailto:201822030311@std.uestc.edu.cn) (Y.S.); [uestcssp@uestc.edu.cn](mailto:uestcssp@uestc.edu.cn) (S.S.); [xinyuwang@uestc.edu.cn](mailto:xinyuwang@uestc.edu.cn) (X.W.); [jschen@uestc.edu.cn](mailto:jschen@uestc.edu.cn) (J.C.)

<sup>2</sup> Hunan Aerospace Huanyu Communication Technology Co., LTD., Changsha 410006, China; [hy07@hthykj.com](mailto:hy07@hthykj.com)

<sup>3</sup> State Key Laboratory of Space Power-Sources Technology, Shanghai Institute of Space Power-Sources, Shanghai 200245, China; [wuyongmin14@sina.com](mailto:wuyongmin14@sina.com) (Y.W.); [guorui72045@sina.com](mailto:guorui72045@sina.com) (R.G.)

<sup>4</sup> Shenzhen Clean Energy Research Institute, Shenzhen 518045, China; [zhuyanlin@uceri.com](mailto:zhuyanlin@uceri.com)

\* Correspondence: [xyg@uestc.edu.cn](mailto:xyg@uestc.edu.cn)

**Citation:** Yan, Z.; Song, Y.; Wu, S.;

Wu, Y.; Song, S.; Wang, X.; Zhu, Y.;

Chen, J.; Guo, R.; Xiang, Y.

Improving the Ionic Conductivity of the LLZO–LZO Thin Film through Indium Doping. *Crystals* **2021**, *11*, 426. <https://doi.org/10.3390/crust11040426>

Academic Editors: Yuriy Zorenko,  
Kazimierz Fabisik, Kazimierz  
Paprocki, Szymon Łoś and Giuseppe  
Prestopino

Received: 2 March 2021

Accepted: 13 April 2021

Published: 15 April 2021

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**Table S1.** The thickness of In<sub>2</sub>O<sub>3</sub> thin film after repeating depositing 120 layers.

| Samples | Thickness (nm) | The average thickness (nm) |
|---------|----------------|---------|----------------|---------|----------------|---------|----------------|----------------------------|
| A1      | 701.4          | A2      | 708.4          | A3      | 715.6          | A4      | 731.5          |                            |
| B1      | 712.3          | B2      | 741.3          | B3      | 718.7          | B4      | 729.4          |                            |
| C1      | 705.8          | C2      | 732.6          | C3      | 726.6          | C4      | 727.3          |                            |
| D1      | 704.5          | D2      | 727.3          | D3      | 725.2          | D4      | 718.6          | 720.4                      |

**Table S2.** The thickness of LLZO thin film after repeating depositing 80 layers.

| Samples | Thickness (nm) | The average thickness (nm) |
|---------|----------------|---------|----------------|---------|----------------|---------|----------------|----------------------------|
| A1      | 544.6          | A2      | 563.3          | A3      | 554.9          | A4      | 569.6          |                            |
| B1      | 554.7          | B2      | 575.7          | B3      | 565.1          | B4      | 552.4          |                            |
| C1      | 562.8          | C2      | 571.2          | C3      | 566.6          | C4      | 548.4          |                            |
| D1      | 548.6          | D2      | 554.7          | D3      | 568.6          | D4      | 561.9          | 560.2                      |

**Table S3.** The thickness of Li<sub>2</sub>CO<sub>3</sub> thin film after repeating depositing 400 layers.

| Samples | Thickness (nm) | The average thickness (nm) |
|---------|----------------|---------|----------------|---------|----------------|---------|----------------|----------------------------|
| A1      | 317.2          | A2      | 319.1          | A3      | 324.0          | A4      | 324.4          |                            |
| B1      | 322.1          | B2      | 325.2          | B3      | 317.4          | B4      | 326.6          |                            |
| C1      | 314.7          | C2      | 315.1          | C3      | 325.3          | C4      | 313.6          |                            |
| D1      | 317.7          | D2      | 323.0          | D3      | 316.3          | D4      | 323.5          | 319.9                      |