

Significant effects of minor chemical composition changing on structure and property of $(\text{Pb}_{1-y}\text{Sr}_y)(\text{Mg}_{1/3}\text{Nb}_{2/3})_{0.07}\text{Zr}_x\text{Ti}_{0.93-x}\text{O}_3\text{:zLa}$

Jian Guo¹, Ming-Yuan Yan¹, Hao-Ran Yu¹, Ji Zhang^{2,*}, Guoliang Yuan², Shan-Tao Zhang^{1,3,*}

¹ National Laboratory of Solid State Microstructures, College of Engineering and Applied Sciences, Nanjing University, Nanjing 210093, China

² School of Materials Science and Engineering, Nanjing University of Science & Technology, Nanjing 210094, China

³ Nanjing University (Suzhou) High-tech Institute, Suzhou Industrial Park 215123, China

*Corresponding authors: jizhang@njust.edu.cn, stzhang@nju.edu.cn

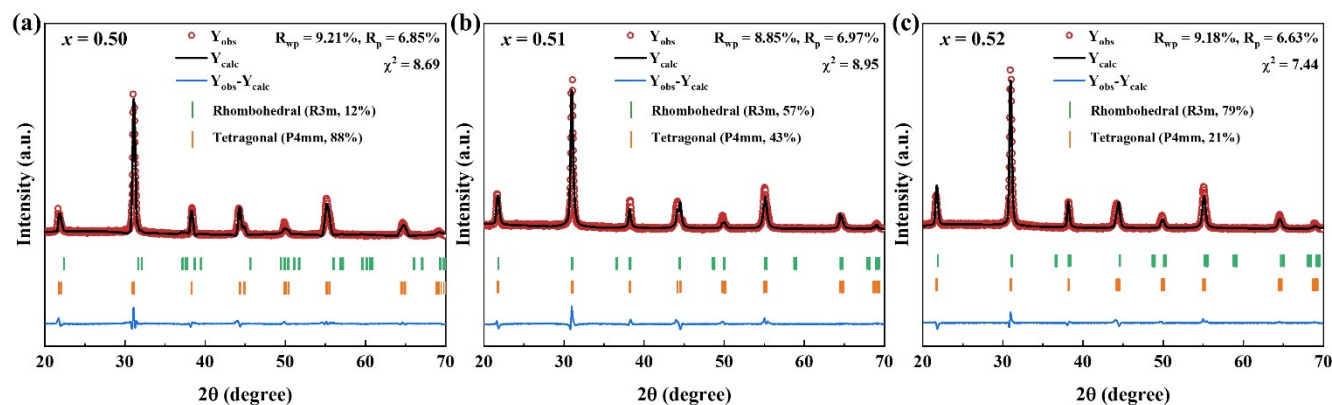


Figure S1 (a)-(c) The results of Rietveld structural refinement of the ceramics with $x = 0.50-0.52$, $y = 0.06$ and $z = 0.025$.

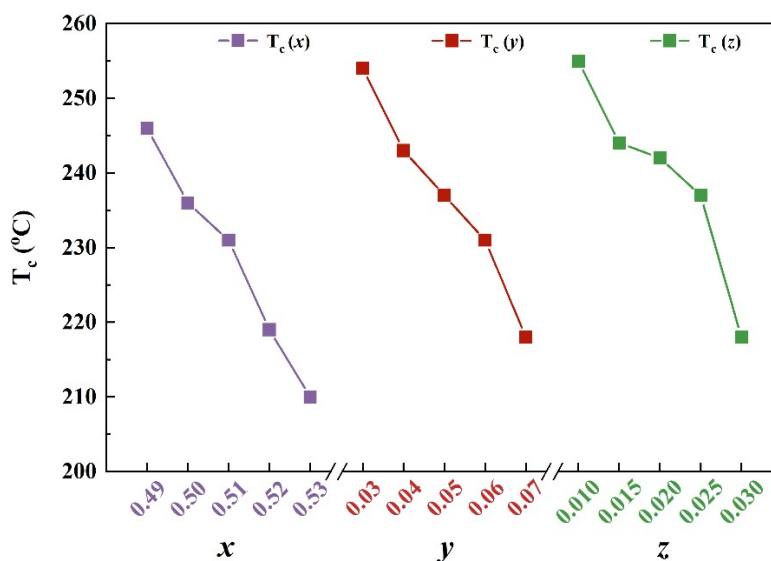


Figure S2 The summary plot of T_c versus x - y - z .

Table S1 Comparison of piezoelectric coefficient d_{33} and Curie temperature T_c of Pb-based piezoceramics

Composition	d_{33} (pC/N)	T_c (°C)	Ref.
PZT-4	289	328	[1]
PZT-5	365	358	[1]
PZT-5A	515	310	[1]
PZT-5H	595	193	[2]
PZT-8	218	300	[3]
PNN-PT	531	55	[4]
PNN-PZT	1015	100	[5]
PMN-PT	580	158	[6]
PMN-PZT	760	198	[7]
This work	645	242	

Reference

- [1] G. H. Haertling, *J. Am. Ceram. Soc.* 1999, **82**, 797-818.
- [2] J. Guo, B. Tong, J. Jian, J. Chen, T. Zhou, X. Shang, J. Cheng, *J. Eur. Ceram. Soc.* 2020, **40**, 3348-3353.
- [3] T. R. Shrout, S. J. Zhang, *J. Electroceram.* 2007, **19**, 111-124.
- [4] H. Yu, J. Guo, J. Wang, J. Zhang, S.-T. Zhang, *Dalton Trans.* 2024, **53**, 11713-11719.
- [5] L. Bian, X. Qi, K. Li, Y. Yu, L. Liu, Y. Chang, W. Cao, S. Dong, *Adv. Funct. Mater.* 2020, **30**, 2001846.
- [6] J. Wang, S. Wang, X. Li, L. Li, Z. Liu, J. Zhang, Y. Wang, *J. Adv. Ceram.* 2023, **12**, 792-802.
- [7] L. Wang, R. Liang, C. Mao, M. Gao, G. Du, F. Cao, G. Wang, X. Dong, *J. Am. Ceram. Soc.* 2012, **95**, 445-448.