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## Supplementary materials





Fig.S2 The XRD patterns of  $Li_3Mg_{2-x/3}Nb_{1-2x/3}Ti_xO_6$  (x=0.32, 0.34, 0.36, 0.38) microwave ceramics sintered at 1260°C for 6h.

From Fig.S1, we can see that the patterns of the sample x=0.4 and x=0.5 are also shown the cubic rock salt type reflections. And in Fig.S2, a clearer process of the vanishing of the superlattice reflections is provided.