

Figure S1. Scanning Electron Micrograph taken with backscattered electrons detector of a sample sintered at 1100 °C for 10 h.

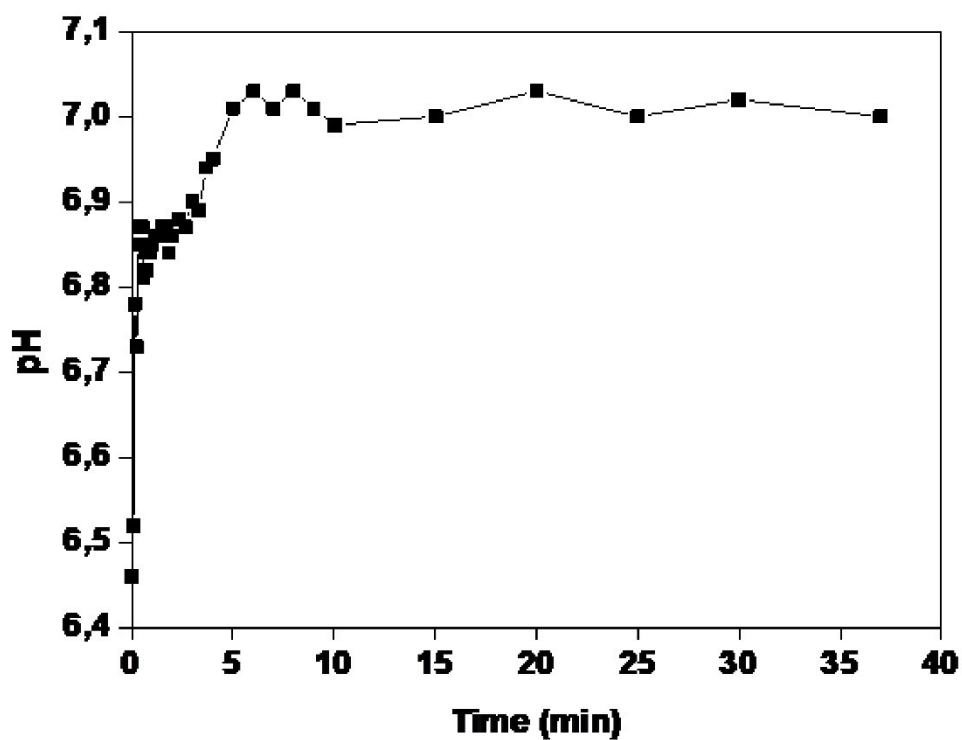


Figure S2. pH evolution at room temperature of suspension of 500 mg of $\text{La}_2\text{LiNbO}_6$ in 50 ml of water.

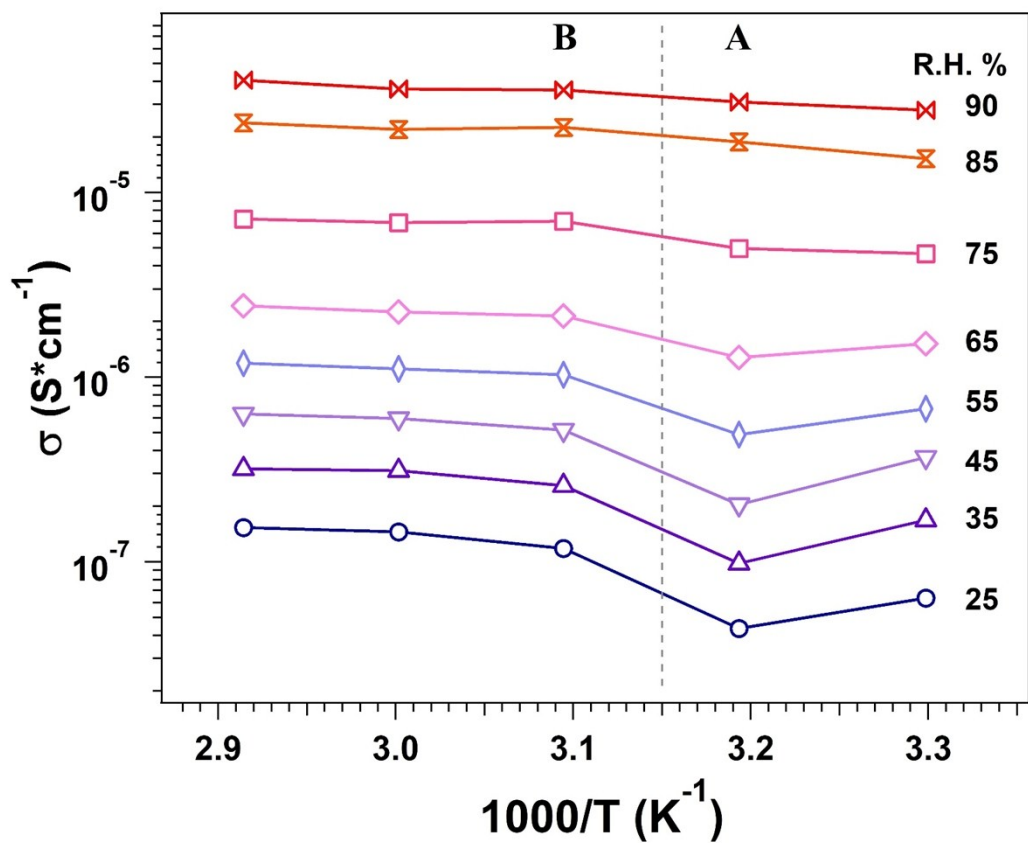


Figure S3. Dependence on $1/T$ of the conductivity of $\text{La}_2\text{LiNbO}_6$ sensor. α point at $T = 45^\circ\text{C}$ and $\text{RH}\% = 62\%$ delimits the T and RH% regions where the sensor is useful for practical applications ($T \geq 46^\circ\text{C}$, $\text{RH}\% > 62\%$).

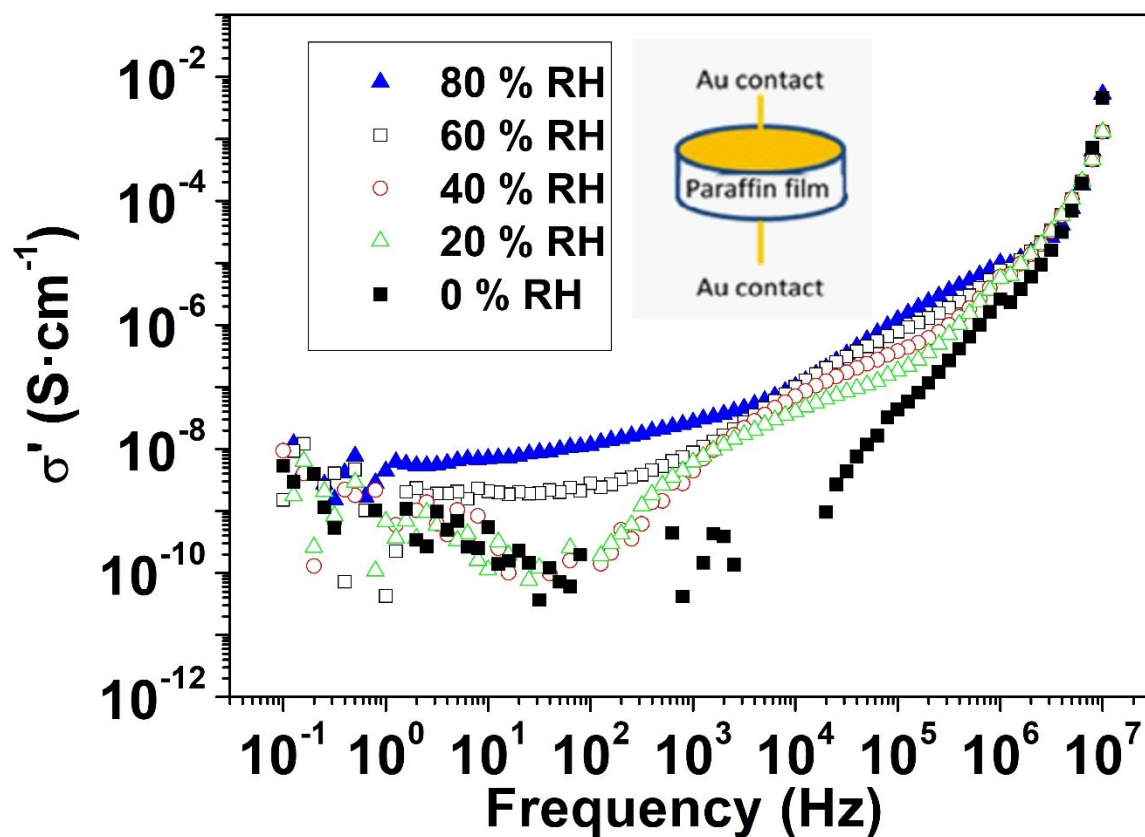


Figure S4. Dependence on frequency of real component of conductivity (σ') of sample (disk) with the lateral surfaces covered with a paraffin film. The test sample was prepared using a dry pellet of the sample inside a dry box. Tests were carried out at different RH%.

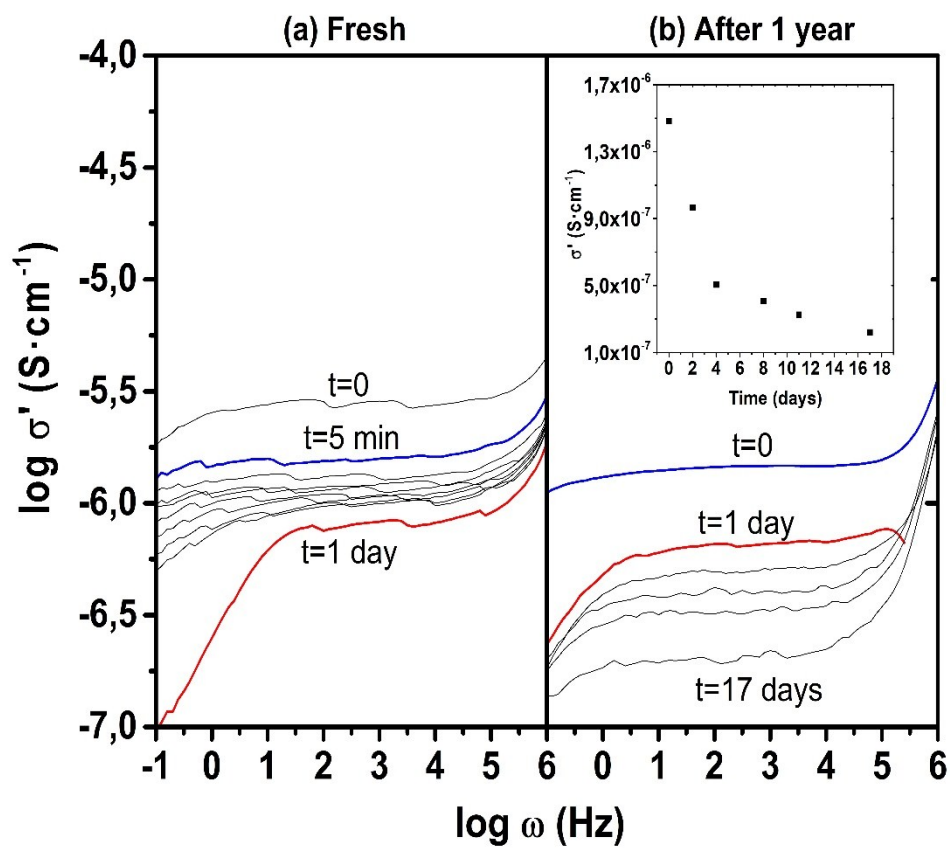


Figure S5. Electric response on time at 50 °C and 55 % RH of La₂LiNbO₆ sample. (a) sensor freshly assembled and (b) after one year of operation. The inset shows the dependence of σ'' measured at 1kHz on time after one year.



Figure S6. Shape and size of La₂LiNbO₆ pellet used to study the electric response on RH%.