Electric-field effect on La$_{0.9}$Ba$_{0.1}$MnO$_3$ strained films. CHENG-PANG LIN, Y.H. HO, HSIUNG CHOU, Department of Physics and Center for Nanoscience and Nanotechnology, National Sun Yat-sen University, Kaohsiung, Taiwan — Electric field effect on superconducting films can modulate the carrier concentration of the films and the superconducting transition temperatures. Although the change of the carrier concentration is relatively small at a field of around $10^8$ V/cm, $T_C$ can be altered in a range as wide as few degrees. In this study, a La$_{0.9}$Ba$_{0.1}$MnO$_3$ strained films with a thickness of 20nm was constructed into similar geometry as earlier reports, various gate voltages, equivalent to 0~$10^6$ V/cm, were applied while measuring resistances as a function of temperature around the metal-insulator transition temperatures. It is found that the $T_C$ and the resistance at constant temperature changes sharply at low gate voltage and saturated to a certain value at large gate voltage.