

From GLAD magnetron sputtering to diagnostic device

K.Marszalek^{1,2}, A.Rydosz¹, A.Maj¹

¹. AGH University of Science and Technology, 30 Mickiewicza Ave., 30-059 Kraków

². CB RTP S.A., Waryńskiego 3A, 00-645 Warszawa

The several experiments and invention which lead to a diabetic diagnostic device are presented in this chapter. The starting point was the design and construction of the vacuum equipment for GLAD reactive magnetron sputtering.

The technical details of the LASKER based parts machine were described. The explanations why this technology was chosen for parametric, semi-conducting gas sensor production is presented.

Several metallic oxides like CuO, SnO₂, and WO₃ was investigated as the potential candidates for acetone sensors. The main goal was to measure acetone content in a human exhaled breath. The acetone and three other gases are the markers of diabetic disease. The most difficult problem to solve was the extremely low content of these gases in human breath. To fulfill the measure requirements a several sensor metrics were design and constructed. All inventions installed in a final device where patented. Finally, the design of the diagnosis device was described. We hope that after medical tests device will enforce to the market in Poland, Europe, and everywhere.