

In this thesis, the preparation of a chemical sensor that uses a one-dimensional structure as a sensitive part is studied. First, a scanning electron microscope (SEM) was used to examine the following structures: zinc oxide nanorods, tungsten oxide nanorods, and gallium-doped zinc oxide nanorods. To verify their composition, energy-dispersive X-ray spectroscopy (EDX) was performed. Three chips were examined as well, one of which was then selected for the subsequent preparation of the nanosensor. This was achieved by lifting the structure from the substrate using a nanomanipulator integrated into the microscope with an inserted tungsten tip and placing it on a contact of the chip. To attach the nanorod to the tip, two methods were used. The first one used electrostatic attraction between the rods and the tip, while the second one was based on the deposition of platinum on the rod-tip contact using a focused ion beam (FIB) and a gas injection system (GIS).