**Applications of Industrial Robots in Manufacturing Processes**

**Abstract**

Production technologies are one of the most important areas (in addition to handling and quality control) of application of industrial robots. The application in various types of welding is the most common application of robots in production technologies, and this area is well studied. Here will be discussed the advantages and challenges of using robots in production technologies on the examples of belt grinding and incremental sheet metal forming. These operations use the flexibility of industrial robots and the possibility of their simple reprogramming to process different parts, so that production in smaller batches is possible. It is also possible to process products with complex sculptured surfaces. The main challenges that arise here are the definition of tool paths on the robot arm, as well as the elimination of errors on the geometry and surface of the product after processing. In this presentation, offline programming systems will be presented, with the possibility of graphically defining the path of the robot arm and the principles of online path correction with the aim of increasing the processing quality.