

## Abstract:

This thesis entitled "Design and construction of portable plastic pipe welding machine through the friction method" was held in the fifth year of study. The purpose of this thesis is the study of various methods for plastic pipe welding and construction of portable welding machine for welding plastic pipes, which will have the ability to be easily transferred to areas where there may be leakage or damage to piping systems in order to easy, quickly and inexpensively repair the damage.

The machine should be constructed in such a way that will be operated only by one person. They will be some pipe weldings and samples will undergo a stress test in order to asses their pressure resistance and compare them with the construction of pipe resistance value. Another aim of this study is to examine the factors which affect the quality of the welds.

Finally, ways of improving the machine and the whole process will be suggested, so as to achieve better quality of welding.