Study of cavitation effect on the impellers of various types of Poval pumps materials

The work that we have considered performing in this thesis intends to study cavitation phenomenon in the radial centrifugal pumps. To do so, we took the pump (40 NVA) as an example, on which we undertook first a general theoretical study that included its various characteristics, and the cavitation phenomenon. Moreover, and in the practical part, we tried to apply this phenomenon on the machine (two hundred hours for each type of materials; bronze, aluminum and cast iron in this case). This experiment will be based mainly on these three types of metals which are used in the manufacturing of impeller, this in order to study the resistance quality of each of the materials to the phenomenon's effects.

Key words: Pump; cavitation; performances; materials.