



**SINTERING STUDY IN METAL INJECTION MOLDING
(MIM) PROCESS**

**MOHD KHUZAIRY BIN MOHD YUSOF
2001194906**

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**Faculty of Mechanical Engineering
Universiti Teknologi MARA (UiTM)**

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ABSTRACT

The Metal Injection Molding (MIM) process becomes the most important manufacturing process in the metal forming technology. This process involves the combination of plastic injection molding technology with the powder metallurgy process. MIM consists of 4 major steps that are mixing of metal powder and binder system to produce a homogenous feedstock, injection molding into a desired shape, debinding to remove binder components and sintering to achieve the desired mechanical properties. In this study, the feedstock of Carbonyl Iron powder (CIP-S-1641) that has a mean particle size of 4 μm and spherical shape and a binder known as Hostamont EK583 were used. The main focus of this study is to develop understanding in Sintering process, by carry out a study on the effects of different parameters such as heating rate, on the mechanical properties that involved during sintering process, also to study the typical defect after sintering process and further the ways to overcome it. Based on the experiment, it presented the good sintered product by considered the different parameters as mentioned. The result also shows the determination of sintering densification and their properties are contingent through the parameters used and also the several types of defects occurred after sintering process.

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