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AKM NURUL AMIN

**DESIGN FOR MANUFACTURE**

Towards Improved Manufacturability



**IIUM Press**

# DESIGN FOR MANUFACTURE

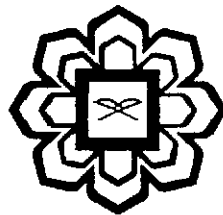
## Towards Improved Manufacturability

### EDITORS

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# Mould Design for Handphone Casing Using Moldflow

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## 1. Introduction

### 1.1 Rapid Injection Moulding.

Rapid injection moulding (RIM), is a lot like conventional injection moulding (CIM), except that the design and manufacturing steps of mould-making have been automated. Because these two steps are the most costly and time-consuming in conventional moulding, their automation is what makes RIM “rapid” and the reason it is so cost effective. RIM typically cuts the lead time for the initial parts to one-third of conventional methods. Cost saving varies with the number of parts being produced, but RIM typically has a substantial cost advantage in runs of up to thousands of parts. Actually, RIM produces quality moulds using advanced aluminium alloys and precise, high-speed CNC machining. Parts can be moulded in almost any engineering grade resin [1].

The mould part can be cut using three-axis CNC milling. Ideally can be designed without any undercuts, but the good news is that the design of many parts which appear to require them can be easily “tweaked” to eliminate the need for undercuts. As new technology emerges, however, there is always a time during which early adopters can choose fast, cheap, and good. Rapid injection moulding (RIM) is just such an advance. Until now, there have to wait weeks for conventional injection moulded parts, pay exorbitant tooling charges, or turn to rapid prototyping, which produces parts that are typically less than functional and expensive in any significant quantity. RIM, on the other hand, produces fully functional injection moulded parts, does it in days rather than weeks, and typically runs one-third the up-front cost of conventional injection moulding. [1]