

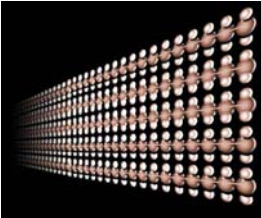
Product Code:  
**IJM03**

Plastic Moulding  
Technology  
Program Series

2-day Technical Training Course

## **PLASTIC MATERIALS, PROPERTIES & THEIR MOULDING CHARACTERISTICS**

**By: William Lee**  
**PSMB SCHEME - SBL PROGRAM**



### **Course Overview**

Effective moulding & use of plastics require a strong understanding of polymerization, whether plastics are thermoplastic or thermosetting, and some idea of the structure (amorphous or semicrystalline) and unique characteristics of each plastic. It is not necessary to memorize the many plastic grades being used in the market but it is important to have an understanding of the families, chemical composition, and their use & moulding characteristics. Mechanical designers, moulders & most of the buyers are often unfamiliar with both the behavior and processing of plastic materials. This 2-day training is targeted to both technical & non-technical audiences and was created to provide individuals using or producing injection moulded plastic products with an insight of materials understanding & how plastic material factor can influence moulding quality & final product property.

### **Benefits**

1. Gain a strong fundamental knowledge of plastic materials and their family group.
2. Study the many properties of plastic materials & their testing methods to meet design specifications.
3. Understand response of plastic material to various moulding parameters & evaluate their mouldability.

### **Course Contents**

#### **1. Polymer Technology:**

- Source (natural & synthetic); Polymerization (addition & condensation); Product possibilities; Polymer structure; Molecular weight & properties; Classification; Resin identification codes; Crystallinity; Measuring crystallinity.

#### **2. Materials Specifications & Testing:**

- Thermal transition of plastics; Glass transition temperature  $T_G$ ; Melting temperature  $T_M$ ; Heat Deflection Temperature; Tensile strength; Elasticity; Hardness; Abrasion resistance; Elongation; Flexural strength; Impact resistance; Dielectric strength; Electrical properties; Chemical resistance; Flowability; Flammability; Effects of additives.

#### **3. Materials Factors & Mouldability:**

- Type of selected plastics; MFI; PvT Characteristics; Rheology of plastic melts; Response to shear rate; Shrinkage behavior; Maximum flow ratio; Hygroscopic or not, etc.

#### **4. Selection Guides on Plastic Materials:**

- Factors affecting selection process; Properties comparison; Plastic applications & limitations.

Organized by:

**Metalloy Consultant Services (for public course)**

**Metalloy Technology Services (for in-house program)**

Tel: 03-80751529, Fax: 03-80761434, Email: [metalloy@tm.net.my](mailto:metalloy@tm.net.my)

## Course Instructor



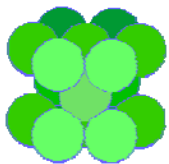
William Lee - Malaysian, Materials Engineer with an honorable Bachelor Degree awarded by The Engineering Council of London (EC, UK). He has over 20 years working & teaching experience in manufacturing industry. William possesses strong fundamentals knowledge in technical science & has special talent to communicate and explain to others the principles involved in various engineering fields. His ability to present and link the various engineering disciplines with real industrial use has made many of his course participants to appreciate the significant of technical details study for manufacturing improvement. Over the years, he has developed a series of patented Manufacturing Insights Training (MIT) programs for various manufacturing industries. He is now a full time contract speaker for a few training organizers as well as professional associations in ASEAN & Australia. William will bring a wealth of teaching experience to this program along with his strong industrial background as a former engineering practitioner in tooling, materials, heat treatment, moulding & metal forming divisions. In addition, William is a versatile trilingual instructor who can instruct technical courses in English, Bahasa Malaysia or Mandarin (or a combination of the languages) to ensure full understanding of his presentation by his trainees from all levels.

## Target Participants

This course is recommended for those who want to acquire an in-depth knowledge on various plastic materials used in injection moulding. It is designed for industrial designers, product designers, project engineers, manufacturing engineers, tooling, processing, and production engineers, mould makers & technical purchasers or anyone involved with plastic injection parts will benefit from this user friendly course.

## Administrative Details

1. This program may be selected in Metalloy Yearly Training Calendar as a public training course. Should public training is not available for this program we will consider opening a public training class if you've minimum guaranteed participants to attend this program.
2. Metalloy can bring this program to your premises as in-house training event for your in-house employees only. Interested participating company may contact us for an in-house training proposal.
3. In-house training can be conducted on weekdays or weekends (including public holidays) to meet the scheduling needs of your targeted staff.
4. For in-house training, a list of participants complete with their full name & designation must be presented to training provider one week prior commencement of each program. The total no. of training manual is supplied to the actual no. of turned out attendees only.
5. Substitute is allowed to replace the earlier registered person if he / she is unable to attend the training program (both public and in-house training). Participating company must inform Metalloy the details of replacement person.
6. All programs are of SBL (Skim Bantuan Latihan) type. Eligible company (Human Resources Development Fund contributor) must apply through themselves for the rebate of any eligible expenses (including training fees) from Human Resources Development Council. Metalloy bears no responsibility for the approval of training grants or any form of rebates between participating company and HRDC.



# Promoting Scientific Manufacturing

◆ **Developing K-Workers; Transforming to K-Economy** ◆

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