NOVEL OF BINARY METAL-NON METAL MATERIAL FOR
CHAIR FLOWER PRODUCT (NOVEL AI-PS FOR CHAIR
FLOWER PRODUCT)

INTRODUCTION

Material for aluminium product usually made from aluminium scrap. Nowadays, the price of aluminium scrap is increased. The idea is how to minimize the cost of production via minimize the weight of the product without changing the form or the shape of product.

Binary aluminium and metal alloys are common and plenty. In this research, the idea is to combine aluminium with non metal polystyrene. In this case polystyrene was selected because of its low density, and low melting temperature compare with aluminium. However, combining aluminium with polystyrene as alloys is unexplored off. This concept is simple and never been attempted before due to the thermal instability and degradation of polystyrene. The product aluminium-polystyrene is then tested to study its mechanical characteristic.

MAKING PROCESS

Mould was made by CO₂ process → Polymer was placed in mould cavity → Aluminium ingot was melted → Molten aluminium was poured into mould → Casting was removed from mould

ADVANTAGES

1. Light weight compare to aluminium products without change of shape and dimension.
2. Low density, increase hardness.
3. Cheap and low production cost.
4. Ease of processing.
5. Better handling.

<table>
<thead>
<tr>
<th>Material</th>
<th>HV</th>
<th>Weight</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>Pure Al</td>
<td>47.83</td>
<td>260g</td>
<td>RM17</td>
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<tr>
<td>Al-PS</td>
<td>69.37</td>
<td>250g</td>
<td>RM16</td>
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Mechanical Properties & Production Cost