Combinatorial process for Bulk Metallic Glasses

OCR Number: OCR 6186

Rapid Development of BMG Alloys with High Formability

High-Throughput Characterization

\[ F \propto \frac{h}{S} \]

Combinatorial Sputtering

<table>
<thead>
<tr>
<th>Al</th>
<th>10-30 %</th>
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</thead>
<tbody>
<tr>
<td>Cu</td>
<td>30-60 %</td>
</tr>
<tr>
<td>Zr</td>
<td>30-55 %</td>
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</tbody>
</table>
High-Throughput Characterization of Formability

\[ F \propto \frac{h}{S} \]

A. P1 → Si Mold \\
    P2 ← BMG

B. ~3000 compositions

C. Si Mold
   MG Film
   P1 → P2
Mg-Cu-Y

Best formability composition here: Mg_{69}Cu_{21}Y_{10}

Best formability composition reported: Mg_{65}Cu_{25}Y_{10}

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