Combinatorial process for Bulk Metallic Glasses

OCR Number: OCR 6186

Rapid Development of BMG Alloys with High Formability

High-Throughput Characterization

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

a) Combinatorial Sputtering

b) Compositional Library

<table>
<thead>
<tr>
<th>Adhesion Layer</th>
<th>Gas Releasing Agents</th>
<th>(GRAs)</th>
<th>(GRAs)</th>
<th>Si</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel</td>
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</tbody>
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Composition:
- Al: 10-30%
- Cu: 30-60%
- Zr: 30-55%
High-Throughput Characterization of Formability

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

A. P1 \quad Si Mold
    P2 \quad BMG

B. 

C. 

~3000 compositions
Best formability composition here: Mg_{69}Cu_{21}Y_{10}

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

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