Combinatorial process for Bulk Metallic Glasses

OCR Number: OCR 6186

Rapid Development of BMG Alloys with High Formability

High-Throughput Characterization

\begin{align*}
F &= \frac{1}{3\eta} \int_0^h \frac{1}{\eta} \, df \\
&\propto \frac{h}{S}
\end{align*}

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Combinatorial Sputtering

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<table>
<thead>
<tr>
<th>Compositional Library</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adhesion Layer</td>
</tr>
<tr>
<td>Gas Releasing Agents</td>
</tr>
<tr>
<td>Steel</td>
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</tbody>
</table>
High-Throughput Characterization of Formability

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

A. Si Mold

B. BMG

C. MG Film

~3000 compositions
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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