Combinatorial process for Bulk Metallic Glasses

OCR Number: OCR 6186

Rapid Development of BMG Alloys with High Formability

Combinatorial Sputtering

High-Throughput Characterization

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

1. Compositional Library
   - Gas Releasing Agents
   - (GRAs)
   - (GRAs) Si
   - Steel

2. Adhesion Layer

Al: 10-30 %
Cu: 30-60 %
Zr: 30-55 %
High-Throughput Characterization of Formability

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

A. Si Mold

B. BMG

C. Si Mold
MG Film

\~3000 compositions
Best formability composition here: $\text{Mg}_{69}\text{Cu}_{21}\text{Y}_{10}$

Best formability composition reported: $\text{Mg}_{65}\text{Cu}_{25}\text{Y}_{10}$

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