Combinatorial process for Bulk Metallic Glasses

OCR Number: OCR 6186

Rapid Development of BMG Alloys with High Formability

High-Throughput Characterization

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

- \( P_1 \) to \( P_2 \)
- Si Mold
- MG Film

Compositional Library

- Gas Releasing Agents
- (GRAs)
- (GRAs) Si
- Steel

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

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

A. P1 \hspace{1cm} Si Mold \hspace{1cm} P2  

B. BMG  

C. Si Mold  
MG Film  

~3000 compositions
Mg-Cu-Y

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

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

Licensing Contact: Richard Andersson
richard.andersson@yale.edu