Combinatorial process for Bulk Metallic Glasses

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Rapid Development of BMG Alloys with High Formability

High-Throughput Characterization

\[ F = \frac{1}{3} \int_0^h \frac{1}{\eta(T)} \, dF \]

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

Combinatorial Sputtering

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 \hspace{1cm} 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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