Flow Properties of amorphous Al-Ni Alloys

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Abstract

Using molecular dynamics (MD) with RGL many-body potential, the flow properties of liquid and super-cooled liquid Al-Ni systems are studied over various compositions. These properties can be well described by some general models, through which we can find proper parameters to characterize the nature of a flow system. An alternative equation based on energy landscape theory is suggested to replace the widely-used Vogel-Fulcher Law to more accurately describe the temperature dependence of viscosity and estimate Kauzmann Temperature, the characteristic temperature for glass-forming.

- **Al$_7$Ni Flow Properties**
  
  Vogel-Fulcher Law can only describe part of the viscosity curve, while our new equation works well in wide range