

## Deeper understanding of phase diagrams through visualisation

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A phase diagram is an indispensable tool when studying the behaviour of systems under varying temperature and composition. It is relatively simple to superficially interpret a phase diagram using the lever rule. Gaining deeper insight into the underlying principles of the phase diagram can be daunting if you do not understand the core thermochemical concepts of Gibbs free energy minimisation and zero-phase fraction lines. Visualisation can help to develop an understanding of how these concepts form the basis of a phase diagram, and a deeper theoretical understanding.

In this presentation, I will demonstrate the following:

- ⑩ An interactive binary and ternary phase diagram that visually ties together the concept of Gibbs free energy minimisation into the zero-phase fraction lines of a phase diagram.
- ⑩ An interactive 3D model of a ternary phase diagram.

I will discuss the data generation process as well as the open source tools used to create the visualisations.