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Superplasticity, Plastic Deformation, and Grain Refinement of Metals and Alloys

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Message from the Guest Editor

Dear Colleagues,

Superplasticity (SP) is the exceptional capability of materials including metals and alloys to exhibit high elongation or ductility, typically more than 400% elongation. Quasi-superplasticity usually obtains 200–300% elongation. Superplastic forming can manufacture alloy components with a complex shape on small tonnage equipment. This special issue plans to give an overview of the most recent advances in the field of metallic SP research. It aims to bring forward new ideas and innovation knowledge relevant to SP of metals and alloys, and explore the opportunity of superplastic forming.

Potential topics include but are not limited to:

- Superplastic ductility achieved in a variety of alloys;
- Underlying deformation mechanism of superplasticity and dislocation creep;
- Mechanical behavior and microstructural evolution of various alloys deformed at elevated temperature;
- Modelling of superplasticity and dislocation creep;
- Grain refinement and its evolution mechanism by various approaches of severe plastic deformation and conventional thermomechanical processing;
- Superplastic forming, and so on.



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Special Issue



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Editor-in-Chief

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Message from the Editor-in-Chief

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