Título: Superplasticity In Metals And Ceramics

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This book describes advances in the field of superplasticity. This is the ability of certain materials to undergo very large tensile strains, a phenomenon that has increasing commercial applications, but also presents a fascinating scientific challenge in attempts to understand the physical mechanisms that underpin it. The authors emphasise the materials aspects of superplasticity. They begin with a brief history of the phenomenon. This is followed by a description of the two major types of superplasticity - fine-structure and internal-stress superplasticity - together with a discussion of their operative mechanisms. In addition, microstructural factors controlling the ductility and fracture in superplastic materials are presented. The observations of superplasticity in metals (including aluminium, magnesium, iron, titanium and nickel), ceramics (including monoliths and composites), intermetallics (including iron, nickel, and titanium base), and laminates are thoroughly described. The technological and commercial applications of superplastic forming and diffusion bonding are presented and examples given.