



# Concise Encyclopedia of Self-Propagating High-Temperature Synthesis

History, Theory, Technology, and Products



Edited by

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## History, Theory, Technology, and Products

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### AUDIENCE

Graduate students and researchers in academia and industry working in the field of combustion chemistry and chemical engineering

**Provides an in-depth description of the chemistry and physics, reactions, materials, and processes of self-propagating high-temperature synthesis and combustion synthesis**

### KEY FEATURES

- Written by high-level experts in the field from 20 different countries, along with editors who are founders of the field
- Covers 169 topics in the field of SHS
- Features new phenomena, such as acoustics and high-energy reactions in combustion synthesis
- Provides an overview of many aspects of the constructive application of the combustion phenomenon, for example, in the fabrication of advanced materials

### DESCRIPTION

The *Concise Encyclopedia of Self-Propagating High-Temperature Synthesis: History, Theory, Technology, and Products* helps students and scientists understand the fundamental concepts behind self-propagating high-temperature synthesis (SHS). SHS-based technologies provide valuable alterations to traditional methods of material fabrication, such as powder metallurgy, conventional and force sintering, casting, extrusion, high isostatic pressure sintering, and others. The book captures the whole spectrum of the chemistry, physics, reactions, materials, and processes of self-propagating high-temperature synthesis.

This book is an indispensable resource not only to scientists working in the field of SHS, but also to researchers in multidisciplinary fields such as chemical engineering, metallurgy, material science, combustion, explosion, and the chemistry of solids.

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