



Spark Plasma Sintering: Mechanisms, Materials, and Technology Developments

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Message from the Guest Editors

In the last decade, spark plasma sintering (SPS) has emerged to be a very efficient way to fast processing of advanced materials. This led to an evolution in the development of the process through flash spark plasma sintering, high-pressure configurations, low temperature sintering, complex shapes, etc. Nevertheless, these evolutions highlight the challenges of SPS, namely, temperature, pressure, and electrical current homogeneity; scalability; development of complex shapes; and productivity. This Special Issue of *JMMP* is dedicated to SPS and to new developments of this process. Special attention will be given to studies addressing the main challenges of SPS technology via modeling of the multiphysics fields, understanding the sintering mechanism, the electrical current's effect on sintering, and the development of innovative SPS approaches. The following topics are encouraged in this Issue:

- specific sintering mechanisms study;
- multiphysics/multiscale modeling of SPS;
- flash sintering;
- high-pressure SPS;
- low temperature SPS;
- complex shapes;
- SPS potential for production and scalability.





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Message from the Editor-in-Chief

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