

# Foreword

Nanoscience and technology has emerged as a frontier area of research today. A great deal of stimulating progress is being made in the world of nanoscience every other day. Research in “Nanochemistry,” chemistry of nanomaterials, has resulted in the developments of newer methods of synthesis of materials with desired structure, composition, and properties of nanomaterials and their related applications. With this rich array of knowledge available, the question arises as to how does a student, a researcher, or materials scientist get an actual feel of nanopowders and get down to the science and art of making them?

Chemistry deals with the synthesis and analysis both being complementary are equally important. Prof KC Patil with his training in Inorganic Synthesis and Propellant Chemistry has found a novel and simple method of tailor-making oxide materials. Prof Patil’s method is distinctly different from the other known methods. I am particularly impressed by the simplicity of the process and the choice of the reactants to prepare a variety of oxide materials from alumina to zirconia and their composites.

Self-propagating high-temperature synthesis where simple chemical processes are used to study complex chemical reactions is of interest from both theoretical and practical point of view. The solution combustion method of Prof Patil is of interest from the investigations of the mechanism of the physico-chemical processes involved, dynamics of the product formation, their stability limit, and control of the process. These studies will no doubt bring out new and important results and better understanding. I trust the contributions and

the achievements described in the book will stimulate further investigations in the area of Nanoscience and Technology.

I wish this book all success it deserves.



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