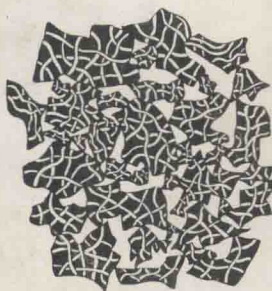
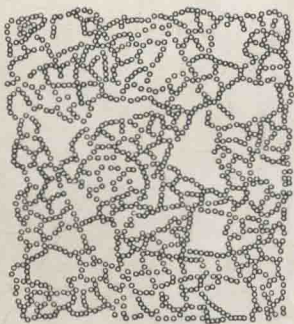
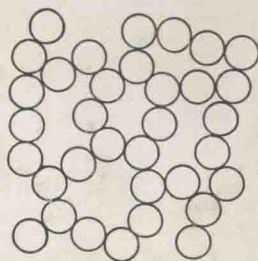
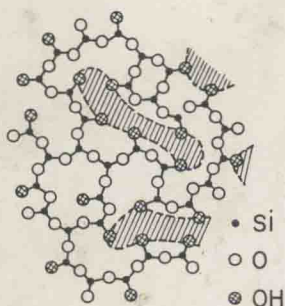


SOL-GEL TECHNOLOGY FOR THIN FILMS, FIBERS, PREFORMS, ELECTRONICS AND SPECIALTY SHAPES



Edited by
Lisa C. Klein

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SOL-GEL TECHNOLOGY FOR THIN FILMS, FIBERS, PREFORMS, ELECTRONICS, AND SPECIALTY SHAPES

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**SOL-GEL TECHNOLOGY
FOR THIN FILMS, FIBERS, PREFORMS,
ELECTRONICS, AND SPECIALTY SHAPES**

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*To my daughter, Martha Ann Kinsella, who
was born while the book was in progress.*

and

*To Dennis Ravaine, my scientific collabora-
tor and friend, who passed away suddenly
in 1986.*

Preface

This book covers the principles, developments, techniques, and applications of sol-gel processing. The sol-gel process is not new, however, a few commercial successes in the recent past have revived interest. The commercial successes are largely in the area of thin films. These films have been developed for optical, mechanical and electrical applications. About one-third of this book covers thin films.

The second area where there has been commercial success is fibers. These fibers whether spun or drawn may be continuous or woven. The applications realized and projected are refractories, composite reinforcement and thermal insulation. About one-third of this book covers fibers.

The third area encompasses the special applications such as preforms, micro-balloons and electronics. Discussion of the chemistry, polymerization, drying and characterization are all necessary parts of a treatment of sol-gel processing.

The anticipated product of this effort is a book that covers the background and fundamentals. Also, it evaluates the present technology and projects new directions short range and long range.

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The book is intended for informational purposes only. The reader is warned that caution must always be exercised when dealing with hazardous materials, and expert advice should be obtained at all times when implementation is being considered.

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