

PREFACE

“Applications of ionizing radiation in materials processing” is a result of the project “Joint innovative training and teaching/learning program in enhancing development and transfer knowledge of application of ionizing radiation in materials processing” (acronym: TL-IRMP, Agreement number 2014-1-PL01-KA203-003611), which is within the framework of the Erasmus+ program “Cooperation for innovation and the exchange of good practices – Strategic Partnerships for higher education”. This book is co-funded by the Polish Ministry of Science and Higher Education. Twenty seven professors and researchers from seven organizations in six countries (Poland, Italy, Lithuania, Romania, Turkey and France) have contributed to this book. The text of each chapter was first internally reviewed amongst the authors, and then it was given a global review by Anthony J. Berejka who is familiar with the effects of ionizing radiation on materials and its use in commercial processes. Mr. Berejka also smoothed out the language of the book using his professional style of scientific English, his native language.

This book consists of two volumes. It starts with the basic theory of radiation and its interactions with materials, and then goes into the radiation chemistry of liquid and solid systems, radiation-induced grafting, crosslinking, polymerization, polymer degradation and oxidation. Analytical methods for characterization of irradiated materials and applications of radiation processing to polymers are then covered. The text ends with opportunities for future developments in radiation processing. This book can be used as teaching material in material science or engineering by university professors, or as a self-learning material by students. It is also very useful for materials scientists, chemical engineers, chemistry students, or for anyone else interested in material processing technologies.

*Assoc. Prof. Yongxia Sun, Ph.D., D.Sc.
Project coordinator of TL-IRMP*