

POLYMERS,  
POLYMER BLENDS,  
POLYMER COMPOSITES  
*and* FILLED POLYMERS

SYNTHESIS, PROPERTIES,  
APPLICATION

Abdulakh K. Mikitaev  
Mukhamed Kh. Ligidov  
Gennady E. Zaikov  
Editors

NOVA

# **POLYMERS, POLYMER BLENDS, POLYMER COMPOSITES AND FILLED POYMERS: SYNTHESIS, PROPERTIES AND APPLICATIONS**

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**ABDULAKH K. MIKITAEV  
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## PREFACE

*“At all times countries and people are incapable  
of harmonic development, if their leaders live  
with no respect to science and scientists”*

Akhmed Sevail

The Nobel Prize Laureate in Chemistry for 1999

*“The only talent of mine is my maximum curiosity”*

Albert Einstein

*“You should have rest before getting tired  
and get medical treatment before getting ill”*

The eastern wisdom

Polymers, polymer blends, polymer composites and filled polymers form the basis of polymer material science – the science of materials, investigation methods and control of their properties. As it is commonly known, the development of mankind passed through several important epochs. A man lived in the Stone Age, then in the Bronze Age, and later on in the Iron Age. Now we live in the Polymer Age, which is proved by some economic reasons. If we estimate the worldwide industrial production of polymers (both synthetic and natural) not by weight, but by volume, we'll get total amount of cast iron, steel, rolled stock and nonferrous metal production that reaches  $400 \times 10^6 \text{ m}^3$ . Hence, dynamics of the process is also important, because polymer production development is 15 – 20% more intensive than development of the metal industry. Such huge production put forward the tasks of improving quality of articles from polymers and extending the field of their application, because even a small enhancement (for instance, extension of reliable operation time of polymeric articles) appears a very important economic question.

The editors of this collection will be grateful to receive any valuable and positive comments on it, and as well as recommendations, which might be taken into account in our future works.

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