

# Preface

The purpose of this book is to show the progress in the field of synthesis and biomedical applications of peptide-, glyco-, glycopeptide dendrimers and analogous dendrimeric structures. This booklet is intended to graduate students, advanced undergraduates, and scientists working in the area of organic chemistry, biochemistry, nanoscience, biology, medicinal chemistry, and biomedical applications.

Dendrimers and dendritic macromolecules were pioneered in the 1980s. They represent a dynamically expanding field spreading from physics, chemistry, and biology to a broad area of biomedical applications. Dendrimers penetrate to till now isolated areas of science and create an interconnected, logical, mutually influencing scientific network, the dendrimer science (dendrimerology).

The reader will be introduced to a very diverse group of methodologies spanning from chemistry, physics, bioengineering, materials science, biomedical applications, and beyond.

Many problems, when seen from the “dendrimeric point of view,” could be overcome if people would use the broad scale of dendrimeric properties and applications. The “cluster effect” (“multivalency”) plays a key role and serves as a connecting glue between different structures.

During the last years the number of papers about dendrimers and their applications reached about 1,600 annually, i.e., twice so much in comparison with 2001. That means that the information wave is at the top. Due to space limitation, this book could not cover all papers and reviews and we apologize to researchers involved in the field whose works have not been covered herein. More references can be found in our earlier reviews (2005; 2008a,b,c; 2011).

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