

This first comprehensive overview of the modern aspects of biomineralization represents life and materials science at its best: Bioinspired pathways are the hot topics in many disciplines and this holds especially true for biomineralization.

Here, the editors - well-known members of associations and prestigious institutes - have assembled an international team of renowned authors to provide first-hand research results.

This third volume deals with biomineralization in medicine, paying closer attention to bones, teeth and pathological calcifications.

An interdisciplinary must-have account, for chemists, biochemists, materials scientists, biologists, physicians, clinicians, and solid-state physicists.



Matthias Epple was born in 1966 in Reutlingen. He studied chemistry at the University of Braunschweig, Germany, and received his PhD in 1992 with Prof. Cammenga. For his postdoc he moved to the University of Washington (Seattle) and completed his Habilitation at the University of Hamburg (Prof. Reller) in 1997. During that time he also worked at the Royal Institution (London) with Prof. Sir J. M. Thomas. He was visiting Professor at the University of Augsburg in 1998 and appointed as Associate Professor at the Ruhr-University of Bochum in 2000. Since 2003 he holds a chair for Inorganic Chemistry at the University of Duisburg-Essen. He has received several awards, including the Netzsch-GEFTA Young Scientist Award, a Heisenberg Grant and the Heinz Maier-Leibnitz Award of the Deutsche Forschungsgemeinschaft (DFG). His research interests include the development of biomaterials, biomimetic crystallization, the application of synchrotron radiation-based methods, the synthesis of nanoparticles and the reactivity of solids.



Edmund Bauerlein was born in 1932 in Höchst (Germany). He studied chemistry in Saarbrücken, Munich and Frankfurt (Germany) and he completed his PhD with Prof. Th. Wieland on biologically relevant hydroquinones. He then moved to the Max-Planck-Institut for medical research, Heidelberg (Germany), as a research group leader. He completed his Habilitation at the chemistry department of the University of Heidelberg in 1974, where he was appointed Professor in 1980. In 1984 he moved to the Max-Planck-Institut for biochemistry in Munich, department of membrane biochemistry, where he was research group leader until 1997. Apart from having published numerous scientific papers, he edited in 2000 a first book on Biomineralization - From Biology to Biotechnology and Medical Application and in 2004 a second one on Biomineralization - Progress in Biology, Molecular Biology and Application. Both editions were published with the intention to direct attention to the rapidly growing importance of molecular biology methods in biomineralization.