FOREWORD

Focus on New Materials Mimicking Nature

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FOREWORD

Focus on New Materials Mimicking Nature

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Living organisms have developed highly efficient structures and processes that consume little energy and produce minimal waste. These processes hold important information for nanotechnology and can lead to breakthroughs in the development of technologies with low environmental load. Therefore, interest in nature-inspired materials is increasing in many fields. In September 2008, the National Institute for Materials Science (NIMS) launched the Learning from Nature Cluster (LNC) with the objectives of probing the foundations of natural processes and pioneering a new materials science through a network of researchers working in different fields. The activities of the LNC during the past three years have resulted in this focus issue. It contains review articles on both the working mechanisms of natural materials and living organisms, and on the development of nature-inspired materials. It contains the following four topics: (1) geomaticals, (2) structural color by biomimetic approach, (3) biominerals and (4) adhesion and the interface of biological materials with the adherend.

We are grateful to all the authors who contributed to this focus issue and hope it will become an important resource for the future development of this field.