Preface

Contemporary human society depends on non-renewable resources and produces huge amounts of waste. Such behavior cannot guarantee sustainable development of the society. Thus alternative approaches and solutions have been researched in all areas of human activities.

Civil engineering is one of industries which still depends on non-renewable sources of materials. But it is also one of these which can effectively help not only to limit use of such sources but can also help with re-use of waste and with reduction of energy consumption (and thus with further saving of non-renewable sources). To meet these aims it is of course necessary not only to develop new materials and new building and structural systems but also to test them and to find ways to use them effectively.

Thus this volume named “Modern and Renewable Materials in Civil Engineering” presents selected research works which aim to solve particular tasks necessary to fulfill the abovementioned aims. There are works from the area of materials with limited CO footprint like timber-based materials and modern concrete with reduced cement content presented there. There are also included works on modern design methods which are required for effective design and assessment of structures based on these modern materials and for more effective usage of traditional materials. The new materials and new, more effective (thus usually lighter and less durable) structures are expected to be more prone to environmental effects caused by pollution and aggressive atmosphere in most urbanized areas. Thus this volume also includes articles related to environmental impact on building structures and materials.