



## Encyclopedia of ZEMCH Research and Development

Collection Editors:

**Dr. Masa Noguchi**

**Prof. Dr. Antonio Frattari**

**Prof. Dr. Carlos Torres  
Formoso**

**Prof. Dr. Haşim Altan**

**Dr. John Odhiambo Onyango**

**Prof. Dr. Jun-Tae Kim**

**Prof. Dr. Kheira Anissa Tabet  
Aoul**

**Dr. Mehdi Amirkhani**

**Prof. Dr. Sara Jane Wilkinson**

**Prof. Dr. Shaila Bantanur**

### Message from the Collection Editors

Dear Colleagues,

We are pleased to invite you to this ZEMCH design engineering knowledge depository, in which the term ZEMCH stands for *zero energy mass custom home*. Designing built environments is influential. Homes need to be mass-customised to accommodate today's diverse needs and demands of individuals and societies for humans' sound living conditions and activities. Social justice and climatic change within built environments in global contexts are a significant part of ZEMCH R&D action. Due to growing housing needs and demands, the global market required the initiation of the ZEMCH R&D movement so as to ensure the delivery of socially, economically, environmentally, and humanely sustainable built environments to privileged and unprivileged families, communities, and nations that are sharing our common future.

This Collection aims to encompass a wide spectrum of ZEMCH research and development knowledge that concerns design engineering, construction management, material innovation, renewable energy technology, community planning, marketing strategy, and education.

