

# Preface

Renewable energy sources are of vital importance for future of humanity due to the issues and problems caused by mainly fossil-based energy systems and applications. Renewable energy sources are treated as sustainable energy sources while fossil fuels are considered unsustainable. This fact has attracted many researchers, scientists, practicing engineers, etc. to work on tirelessly and develop better renewable energy-based technologies for a sustainable future. The study domain is quite diverse, covering many engineering disciplines, such as mechanical, civil, physical, chemical, biotechnology, environmental, industrial, geological, electrical, etc. and non-engineering areas, such as chemistry, biology, physics, mathematics, business, informational technology, economy, medicine, etc.

Everyone agrees that sustainable energy technologies are necessary for solving current and potentially future energy problems and achieve environmentally benign solutions. This volume primarily concerns the largest energy domain under sustainable energy technologies, covering all relevant disciplinary areas, ranging from current problems, projections, new concepts, modeling, experiments and measurements to simulations, and discusses recent research findings on solar energy, wind energy, biomass, geothermal energy, hydro energy, wave energy, hydrogen production, fuel cells, energy storage, heat pump, integrated energy systems, etc.

This volume includes some invited contributions and the selected papers from the 11th International Conference on Sustainable Energy technologies (SET-2012) held in Vancouver, Canada on September 2–5, 2012. The conference had a multidisciplinary nature, covering main areas of sustainable energy technologies, and aimed to provide a forum for researchers, scientists, engineers and practitioners from all over the world to exchange information, to present high-quality research results and new developments in the wide domain covered by sustainable energy technologies, and discussed the future direction and priorities in the field.

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