



POLYTECH

Peter the Great
St. Petersburg Polytechnic
University

SPbWOSCE-2016

15-17 November 2016,
Saint-Petersburg, Russia



PREFACE

Within the “Week of Science in SPbPU” forum, the International scientific conference SPbWOSCE-2016 «Smart City» was held by the Peter the Great Saint-Petersburg Polytechnic University, Institute of Civil Engineering on 15-17 of November, taking place in Ambassador hotel, Saint-Petersburg, Russia. Besides Peter the Great Saint-Petersburg Polytechnic University the co-organizers of the conference were the University of Montenegro, the Riga Technical University (Latvia), the Scientific -Technical and Expert Institution "Construction Expertise Center".

The support of the Government of St. Petersburg was realized by Housing Committee, Construction Committee, Committee on Energy and Engineering Support.

Scientific Editor - **Vera Murgul**.

Among the participants of the event there were scientists and representatives of the academic community, experts in business, representatives of Russian and foreign companies and ecological organizations, specialists in energetics, urban planning and modern technologies of the city infrastructure, transport, etc. The conference provided the participants with a platform to discuss several up-to-date engineering problems. Nearly 400 research articles belonging to the authors from different countries were submitted to SPbWOSCE-2016 «Smart City» conference, which enabled an actual multinational and multicultural exchange of ideas and experiences. This book that comprised the present volumes involves the following topics: Architectura and Urban Planning, Buildings and Structures, Basement and foundations, Building Materials and Products, Applied Mechanics in Construction and Material Science, Bridges, Roads and Tunnels, Energy Efficiency, Renewable Energy and Sustainable Development, Urban Environmental Engineering, Organization and Planning of Construction Works and Municipal Facilities, Education and Training in Area of Civil and Construction Engineering.

On behalf of the Organizing Committee, I would like to express our gratitude to Isaline Augusto for her thoughtfulness, attention to all our questions and great support in SPbWOSCE-2016. We hope that our cooperation with Isaline will proceed.

We try to do everything to make each subsequent SPbWOSCE more proficient and provide authors and attendees with a platform for enjoyable academic research and discussion.

We sincerely hope for and look forward to your attention to the next SPbWOSCE in 2017..

Prof., D.Sc., **Nikolai Vatin**