

International Conference on Sustainable Cities (ICSC 2017)

IOP Conference Series: Earth and Environmental Science
Volume 72

Ekaterinburg, Russia
19 May 2017

ISBN: 978-1-5108-4410-0
ISSN: 1755-1307

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2017) by the Institute of Physics
All rights reserved. The material featured in this book is subject to
IOP copyright protection, unless otherwise indicated.

Printed by Curran Associates, Inc. (2017)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

Table of contents

Volume 72

**International Conference on Sustainable Cities
19 May 2017, Ekaterinburg, Russian Federation**

**Accepted papers received: 21 June 2017
Published online: 2 July 2017**

Preface

011001
OPEN ACCESS
[International Conference on Sustainable Cities](#)

011002
OPEN ACCESS
[Peer review statement](#)

Strategic guidelines for sustainable development of the urban environment to improve the quality of life and restore nature

012001
OPEN ACCESS
[Economic efficiency of environmental management system operation in industrial companies](#)

N Dukmasova, I Ershova, I Platinina and A Boyarinov.....1

012002
OPEN ACCESS
[Phytofilter – environmental friendly solution for purification of surface plate from urbanized territories](#)

O Ruchkinova and I Shchuckin.....9

012003

OPEN ACCESS

[Environmental assessment of the measures increasing the sustainability of motor transport](#)

E Magaril, R Magaril and L Abrzhina.....18

012004

OPEN ACCESS

[Reagent removal of manganese from ground water](#)

G Brayalovsky, E Migalaty and O Naschetnikova.....25

012005

OPEN ACCESS

[Simulation of freezing and thawing of soil in Arctic regions](#)

N Vaganova and M Filimonov.....30

012006

OPEN ACCESS

[Permafrost thawing from different technical systems in Arctic regions](#)

M Filimonov and N Vaganova.....36

012007

OPEN ACCESS

[Atmospheric pollution in cities of Russia: statistics, causes and characteristics](#)

A Petrov and D Petrova.....43

012008

OPEN ACCESS

[Strategy of Construction and Demolition Waste Management after Chemical Industry Facilities Removal](#)

I N Tashkinova, G M Batrakova and Ya I Vaisman.....50

012009

OPEN ACCESS

[Study of surface mud sediment in an urban environment](#)

A Seleznev, A Savastianova and I Yarmoshenko.....59

012010

OPEN ACCESS

[Entropy modeling of sustainable development of megacities](#)

A N Tyrsin and G G Gevorgyan.....64

012011

OPEN ACCESS

[Strategic guidelines of a megalopolis's development: new industrialization and ecological tension](#)

Yulia Lavrikova, Victoria Akberdina and Elena Mezentseva.....73

012012

OPEN ACCESS

[Change in the quality of atmospheric air under the influence of chemical enterprises in the Sverdlovsk Region cities](#)

Maria N Ivantsova, Irina S Selezneva and Maxim A Bezmaternykh.....81

012013

OPEN ACCESS

[Estimation of CO₂-Equivalent Emission under the Copper Fire Refining Process](#)

Yu N Chesnokov, V G Lisienko, S I Holod, V P Anufriev and A V Lapteva.....88

012014

OPEN ACCESS

[Urbanization and Greenhouse Gas Emissions from Industry](#)

N I Didenko, D F Skripnuk and O V Miroyubova.....97

Engineering solutions for smart cities

012015

OPEN ACCESS

[Modern technologies of processing municipal solid waste: investing in the future](#)

A Rumyantseva, M Berezyuk, N Savchenko and E Rumyantseva.....104

012016

OPEN ACCESS

[Fiscal instruments for regulating the sustainable development of urban transport systems in Russia](#)

I Mayburov and Y Leontyeva.....112

012017

OPEN ACCESS

[The chance of transport behavior paradigm in the largest cities of Russian Federation](#)

Denis Vlasov.....120

012018

OPEN ACCESS

[Simulation model for assessing the efficiency of a combined power installation based on a geothermal heat pump and a vacuum solar collector](#)

Ya I Vaysman, AA Surkov, Yu I Surkova and AV Kychkin.....126

Energy Efficient solutions for sustainable development

012019

OPEN ACCESS

[Optimization of Power Distribution Networks in Megacities](#)

V Z Manusov, P V Matrenin, J S Ahyoev and L Sh Atabaeva.....134

012020

OPEN ACCESS

[Radon safety in terms of energy efficiency classification of buildings](#)

A Vasilyev, I Yarmoshenko and M Zhukovsky.....142

012021

OPEN ACCESS

[Energy from Biomass for Sustainable Cities](#)

D Panepinto, M C Zanetti, L Gitelman, M Kozhevnikov, E Magaril and R Magaril.....147

012022

OPEN ACCESS

[Evaluation of the operation efficiency of solar panels in winter](#)

A D Burakova, L N Burakova, I A Anisimov and O D Burakova.....154

012023

OPEN ACCESS

[A sustainable development of a city electrical grid via a non-contractual Demand-Side Management](#)

Vladislav O Samoylenko and Andrew V Pazderin.....163

012024

OPEN ACCESS

[Opportunity and prospect analysis of RES utilization for sustainable development of Ekaterinburg city in Russia](#)

A Volkov and A Aristova.....173

012025

OPEN ACCESS

[Mathematical Approach to Identification of Load Structure at the Nodes of the Distribution Grids 6–10 kV and 0.4 kV](#)

T Nizamutdinova and N Mukhlynin.....181

012026

OPEN ACCESS

[The use of urban wood waste as an energy resource](#)

G I Khudyakova, D A Danilova and R R Khasanov.....190

012027

OPEN ACCESS

[Alternative power supply systems for remote industrial customers](#)

N V Kharlamova, A I Khalyasmaa and S A Eroshenko.....198

012028

OPEN ACCESS

[The use of solar energy for residential buildings in the capital city](#)

V Velkin, S Shcheklein and V Danilov.....209

012029

OPEN ACCESS

[Implementation of energy efficient smart technologies at the urban territories of the Arctic zone of Russia](#)

M V Tsurkan, M A Liubarskaia, A M Vorotnikov and S V Maiorov.....216