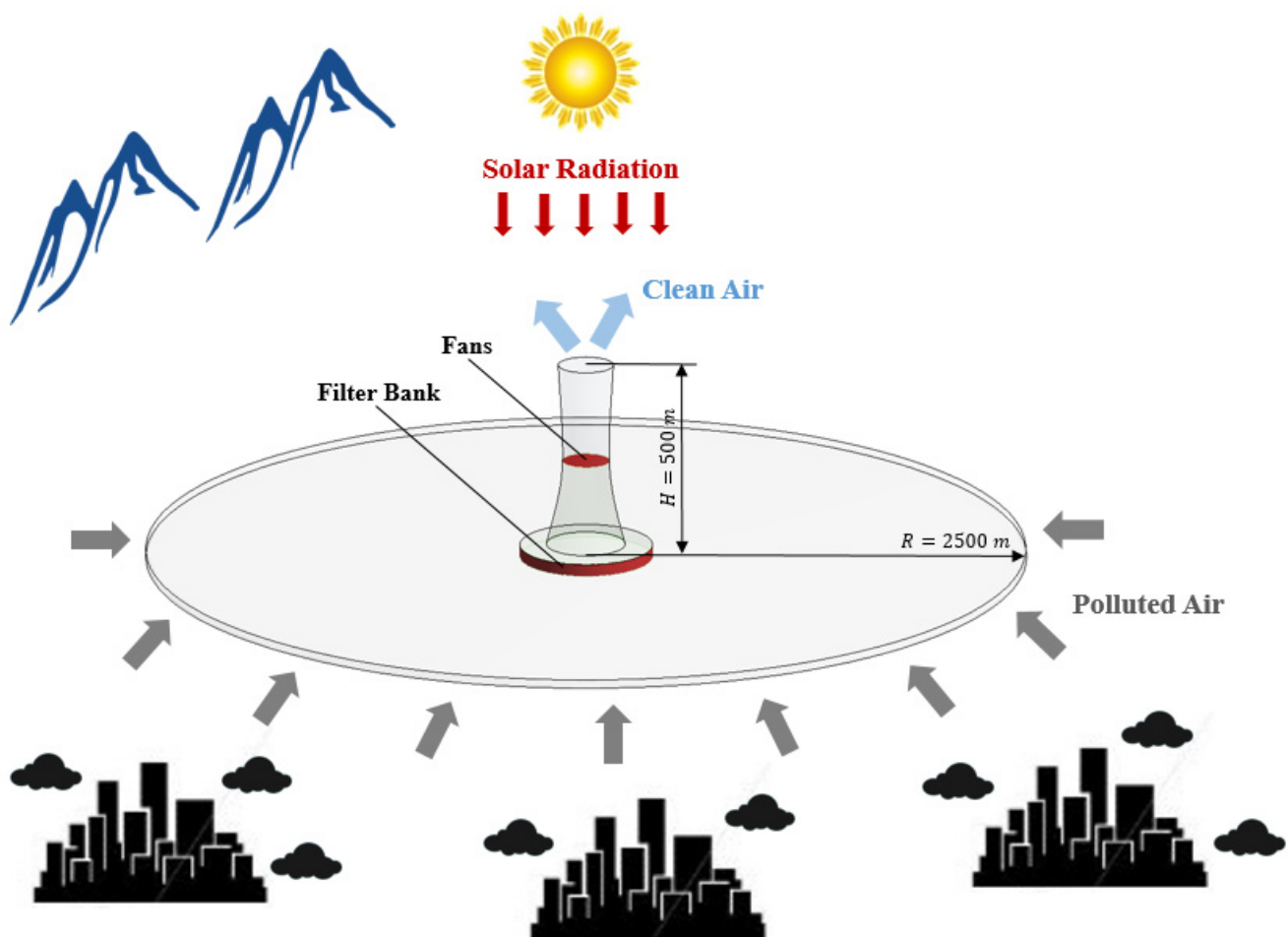


Aerosol and Air Quality Research

Cover Story



A solar-assisted large-scale cleaning system (SALSCS) is proposed for urban air remediation. The system consists of a solar collector, a chimney, and a filter bank. The air flow is driven by buoyancy towards the chimney. A filter bank is used to collect the $\text{PM}_{2.5}$ and larger PM. The system can be complemented by introduction of fans to generate electricity or drive the flow in the absence of solar radiation. Numerical simulations demonstrated that SALSCS is promising for air pollution abatement.

(Cao, Q.F., Pui, D.Y.H. and Lipiński, W. (2015). A Concept of a Novel Solar-Assisted Large-Scale Cleaning System (SALSCS) for Urban Air Remediation. *Aerosol Air Qual. Res.* 15: 1–10)

AEROSOL AND AIR QUALITY RESEARCH

CONTENTS

Control Techniques and Strategy	
A Concept of a Novel Solar-Assisted Large-Scale Cleaning System (SALSCS) for Urban Air Remediation	1
<i>Qingfeng Cao, David Y.H. Pui, Wojciech Lipiński</i>	
Aerosol and Atmospheric Chemistry	
Characterization of PM Using Multiple Site Data in a Heavily Industrialized Region of Turkey	11
<i>Melik Kara, Philip K. Hopke, Yetkin Dumanoglu, Hasan Altiok, Tolga Elbir, Mustafa Odabasi, Abdurrahman Bayram</i>	
Suppression of Cluster Ions during Rapidly Increasing Particle Number Concentration Events in the Environment	28
<i>E. Rohan Jayaratne, Xuan Ling, Lidia Morawska</i>	
Indirect Evidence for the Presence of Secondary Phosphorus in Continental Fine Aerosol	38
<i>Krisztina Krassován, Zsófia Kertész, Kornélia Imre, András Gelencsér</i>	
Diagnostic Analysis of the Sulfate Aerosol Pollution in Spring over Pearl River Delta, China	46
<i>Qi Fan, Jing Lan, Yiming Liu, Xuemei Wang, Pakwai Chan, Shaojia Fan, Yingying Hong, Yexin Liu, Yanjun Zeng, Guixiong Liang, Yerong Feng</i>	
Bulk Level to Individual Particle Level Chemical Composition of Atmospheric Dust Aerosols (PM₅) over a Semi-Arid Urban Zone of Western India (Rajasthan)	58
<i>Rajesh Agnihotri, Sumit K. Mishra, Pawan Yadav, Sukhvir Singh, Rashmi, M.V.S.N. Prasad, C. Sharma, Bhuvan Chandra Arya</i>	
Cultural and Ritual Burning Emission Factors and Activity Levels in India	72
<i>Shamsh Pervez, Rajan Chakrabarty, Shippi Dewangan, John G. Watson, Judith C. Chow, Jeevan Lal Matawle, Yasmeen Pervez</i>	
Diesel Engine Emission	
Microalgae Oil: Algae Cultivation and Harvest, Algae Residue Torrefaction and Diesel Engine Emissions Tests	81
<i>John Kennedy Mwangi, Wen-Jhy Lee, Liang-Ming Whang, Tser Son Wu, Wei-Hsin Chen, Jo-Shu Chang, Chun-Yen Chen, Ching-Lung Chen</i>	
Emissions from Light-Duty Diesel and Gasoline in-use Vehicles Measured on Chassis Dynamometer Test Cycles	99
<i>Célia A. Alves, Diogo J. Lopes, Ana I. Calvo, Margarita Evtugina, Sónia Rocha, Teresa Nunes</i>	
Aerosol Physics and Instrumentation	
Small-Scale Study of Siberian Biomass Burning: I. Smoke Microstructure	117
<i>Olga B. Popovicheva, Valerii S. Kozlov, Guenter Engling, Evangelia Diapouli, Natalia M. Persiantseva, Mikhail A. Timofeev, Ting-Sin Fan, Dikaia Saraga, Konstantinos Eleftheriadis</i>	
Measurements of Nanoscale TiO₂ and Al₂O₃ in Industrial Workplace Environments – Methodology and Results	129
<i>Heinz Kaminski, Mathias Beyer, Heinz Fissan, Christof Asbach, Thomas A.J. Kuhlbusch</i>	
On-Road Measurements of Ultrafine Particles and Associated Air Pollutants in a Densely Populated Area of Seoul, Korea	142
<i>Kyung Hwan Kim, Daekwang Woo, Seung-Bok Lee, Gwi-Nam Bae</i>	
A Study of the Dynamic Behaviour of Fine Particulate Matter in Santiago, Chile	154
<i>Giovanni A. Salini, Patricio Pérez</i>	
A Simplified Approach to Calculate Particle Growth Rate Due to Self-Coagulation, Scavenging and Condensation Using SMPS Measurements during a Particle Growth Event in New Delhi	166
<i>Bighnaraj Sarangi, Shankar G. Aggarwal, Prabhat K. Gupta</i>	
Development of PM_{0.1} Personal Sampler for Evaluation of Personal Exposure to Aerosol Nanoparticles	180
<i>Thunyapat Thongyen, Mitsuhiro Hata, Akira Toriba, Takuji Ikeda, Hiromi Koyama, Yoshio Otani, Masami Furuuchi</i>	

Air Pollution Modeling	
Positive Matrix Factorization of 47 Years of Particle Measurements in Finnish Arctic	188
<i>James R. Laing, Philip K. Hopke, Eleanor F. Hopke, Liaquat Husain, Vincent A. Dutkiewicz, Jussi Paatero, Yrjö Viisanen</i>	
An Integrated SSA-ARIMA Approach to Make Multiple Day Ahead Forecasts for the Daily Maximum Ambient O₃ Concentration	208
<i>Ujjwal Kumar</i>	
Characterisation and Source Apportionment of Submicron Particle Number Size Distributions in a Busy Street Canyon	220
<i>Patricia Krecl, Admir Créso Targino, Christer Johansson, Johan Ström</i>	
Application of Regression Kriging to Air Pollutant Concentrations in Japan with High Spatial Resolution	234
<i>Shin Araki, Kouhei Yamamoto, Akira Kondo</i>	
Life Cycle Assessment of the Environmental Impacts of Typical Industrial Hazardous Waste Incineration in Eastern China	242
<i>Wenjuan Li, Qunxing Huang, Shengyong Lu, Hailong Wu, Xiaodong Li, Jianhua Yan</i>	
Optical/Radiative Properties and Remote Sensing	
Validation of Version 5.1 MODIS Aerosol Optical Depth (Deep Blue Algorithm and Dark Target Approach) over a Semi-Arid Location in Western India	252
<i>Amit Misra, Achuthan Jayaraman, Dilip Ganguly</i>	
Multi-Satellite Observation of an Intense Dust Event over Southwestern China	263
<i>Rong Li, Jianhua Gong, Jieping Zhou, Wenyi Sun, Abdoul Nasser Ibrahim</i>	
Optical Properties of Size-Resolved Aerosol Chemistry and Visibility Variation Observed in the Urban Site of Seoul, Korea	271
<i>Kyung Won Kim</i>	
Air Pollution and Health Effects	
Airborne Nanoparticle Pollution in a Wire Electrical Discharge Machining Workshop and Potential Health Risks	284
<i>Rui Chen, Xiaofei Shi, Ru Bai, Weiqing Rang, Lingling Huo, Lin Zhao, Dingxin Long, David Y.H. Pui, Chunying Chen</i>	
In-Vehicle Exposure to Ultrafine Particles While Driving through a Tunnel System and Associated Lung Deposition Calculations	295
<i>Pierre Madl, Hussain Majid, Felicitas Kwasny, Werner Hofmann</i>	
Short Term Health Effects of Particulate Matter: A Comparison between Wood Smoke and Multi-Source Polluted Urban Areas in Chile	306
<i>Luis Díaz-Robles, Samuel Cortés, Alberto Vergara-Fernández, Juan Carlos Ortega</i>	
Characterizing Particulate Pollutants in an Enclosed Museum in Shanghai, China	319
<i>Lina Wang, Guangli Xiu, Yuanxiang Chen, Fangyuan Xu, Laiming Wu, Danian Zhang</i>	
Impact of Elevated Ozone on Growth, Yield and Nutritional Quality of Two Wheat Species in Northern India	329
<i>Ritu Tomer, Arti Bhatia, Vinod Kumar, Amit Kumar, Renu Singh, Bhupinder Singh, S.D. Singh</i>	
Others	
Biogenic Volatile Organic Compound (BVOC) Emissions from Various Endemic Tree Species in Turkey	341
<i>Baris Yaman, Yagmur Meltem Aydin, Husnu Koca, Okan Dasdemir, Melik Kara, Hasan Altiok, Yetkin Dumanoglu, Abdurrahman Bayram, Doganay Tolunay, Mustafa Odabasi, Tolga Elbir</i>	
Technical Note	
Characterisation of a Commercially Available Thermodenuder and Diffusion Drier for Ultrafine Particles Losses	357
<i>Svetlana Stevanovic, Branka Miljevic, Pierre Madl, Samuel Clifford, Zoran Ristovski</i>	