



## Announcement

- The 8th board meeting has been held on June 14, 2014 at Department of Public Health, National Taiwan University.
- International Conference on Aerosol Science & Technology will be held on 26-27 September 2014 at National Sun Yat-sen University. More detailed information will be announced soon. (<http://2014taar.iee.nsysu.edu.tw>)
- TAAR board members will be reelected in the near future. All members are encouraged to vote.

We would like to invite all of the members to share your research or new aerosol knowledge with us. Thank you very much for your support and help.

Best wishes to you and your family!



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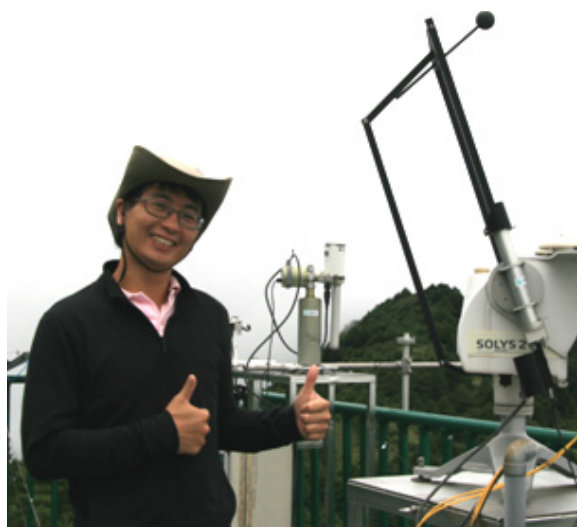


Congratulations Prof. Man-Ting Cheng Retirement

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## Aerosol Researcher Profile -Sheng-Hsiang (Carlo) Wang



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Dr. Sheng-Hsiang Wang received his BS and MS degree from National Central University, Taiwan, in 1999 and 2001. In his master thesis, he studied sulfur deposition distributions over the Taoyuan County using the ISC model and further compared with measurements. This approach has also been applied to Dioxin research. In 2007, he received his PhD degree from Institute of Atmospheric Physics, National Central University. In his dissertation, he developed a modeling system and conducted modeling studies on radiative forcing and regional feedback of Asian biomass burning aerosols. In the meantime, he also helped to initial the Lulin Atmospheric Background Station (LABS) and the Acid Rain Monitoring Network in Taiwan.

During 2008 and 2011, Dr. Sheng-Hsiang Wang was an exchange scholar (post doc) of National Central University and University of Maryland Collage Park, and worked on-site in NASA/GSFC. His research work was strongly related to many groups in GSFC, i.e. SMARTLabs, AERONET, and MPLNET. It should be noted that the GSFC is the best institution for aerosol remote sensing in the world. During the visit in GSFC, Dr. Wang learned a complete knowledge about aerosol remote sensing and measurements. He also had been participated in many international field experiments related to NASA activities. In 2011, Dr. Wang had been selected and funded by the NASA Postdoctoral Program. The funded proposal was aim to develop an aerosol-radiation-interactions modeling system to support a short- to mid-term (1-2 months) regional climate change due to aerosols. In 2012, Dr. Wang returned to NCU as a faculty position to continue his research related to aerosol and radiation. His major research topics are listed below:

## 1. Aerosol and radiation interactions

Aerosol-cloud-radiation interactions in the atmosphere play an important role in the radiation balance of the Earth's Climate. In recent years, the atmospheric radiation budget is getting more attention due to the rapidly change of global climate and frequently occurrence of extreme weather events. The IPCC (2013) estimates the radiative forcing due to anthropogenic activities is about  $2.3 \text{ W m}^{-2}$ , but remains large uncertainty. The complex spatial, temporal, chemical composition, physical size and shape, and optical characteristics of atmospheric aerosols cause large uncertainties in the estimation of aerosol effects on climate. To lessen the uncertainties, Dr. Sheng-Hsiang Wang has devoted to develop a synergy approach. Remote sensing and in situ measurements provide essential information. Numerical models with the aid of observational data sever a proxy to investigate the physical process underlying aerosol-radiation interaction. The approach can help us to improve model and satellite retrieval uncertainty, and further to get better understandings on the correlations between regional aerosol and climate impacts.

## 2. Aerosol optics measurements and remote sensing

Dr. Sheng-Hsiang Wang has lots of experiences with field deployments and knew wide-range instrumentations covering meteorology and aerosol areas. He is even taking seriously on data assurance. In the past 4 years, he has been heavily involved the 7-SEAS program and field experiments. He deployed the state-of-the-art aerosol instruments to remote islands and sites in Southeast Asia. The aerosol system measures various parameters, includes aerosol mass, size, optics, CCN etc. Combining with ground-based remote sensing (e.g., sun photometer, lidar, spectrometer, radiometers), allows he to comprehensively investigate aerosol microphysics/optical properties in different environments. In addition to field experiments, Dr. Wang also in charge of several permanent stations in Taiwan, such as the Lulin Atmospheric Background Station, the EPA-NCU lidar station, background atmospheric radiation stations at Dongsha, Dongyin, and Taiping islands. Staring last year, Dr. Wang also involves instrumentation design and its applications. He hope that he can provide low cost and high accuracy instruments for educational or research propose in the future.

### 3. Satellite remote sensing for air pollution

Satellite data and its applications are getting more popular over the past decade. Specifically, satellite data of atmospheric pollutants are becoming more widely used in the decision-making and environmental management activities. They are employed for estimating emissions, tracking pollutant plumes, supporting air quality forecasting activities, providing evidence for “exceptional event” declarations, monitoring regional long-term trends, and evaluating air quality model output. Remote sensing data are increasingly used in Dr. Wang’s research. For example, satellite fire products have been used to identify biomass-burning sources. Satellite retrieved aerosol optical depth provides the spatial and temporal characterization of aerosols. The vertical distribution of aerosol can be obtained from spaceborne lidar. In addition to aerosol products, more recently applications are extending to air quality related trace gases ( $O_3$ ,  $NO_2$ ,  $SO_2$ ,  $CO$ ,  $CH_2O$ ,  $C_2H_2O_2$ ). With including satellite data in research work, Dr. Wang always find some difference and interesting.

### 4. Numerical model development and application

The fascinating of numerical model is that it can describe detail physical processes which cannot be seen by observations. Dr. Sheng-Hsiang Wang equipped with many modeling skills. His model experiences include ISC, HYSPLIT, MM5, WRF and radiative transfer model. The feedback mechanisms in aerosol-climate system are complicate and challenge for modeling studies. Dr. Wang has been making effort to develop a new modeling system to encounter the challenge. On the other hand, Dr. Wang is collaborating with NASA Global Modeling and Assimilation Office, receiving on-line aerosol simulation data with 25 km resolution globally. The data has been applied to study aerosol dispersion and transport in the region. It also can be used to study long-term aerosol climatology and short-term case study. Recently, Dr. Wang also collaborates with data assimilation group in NCU. The newly development of aerosol data assimilation system will have a great potential to provide a better  $PM_{2.5}$  forecast over Taiwan.

**Title:** *Ozone in the Atmosphere: Basic Principles, Natural and Human Impacts*

**Authors:** Peter Fabian, Martin Dameris

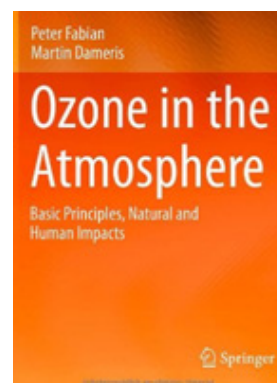
**Hardcover:** 137 pages

**Publisher:** Springer; 2014 edition (May 14, 2014)

**Language:** English

**ISBN-10:** 3642540988

**ISBN-13:** 978-3642540981

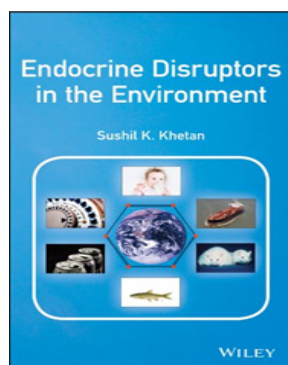


## Book Description

Peter Fabian and Martin Dameris provide a concise yet comprehensive overview of established scientific knowledge about ozone in the atmosphere. They present both ozone changes and trends in the stratosphere, as well as the effects of overabundance in the troposphere including the phenomenon of photo-smog.

Aspects such as photochemistry, atmospheric dynamics and global ozone distribution as well as various techniques for ozone measurement are treated. The authors outline the various causes for ozone depletion, the effects of ozone pollution and the relation to climate change.

The book provides a handy reference guide for researchers active in atmospheric ozone research and a useful introduction for advanced students specializing in this field. Non-specialists interested in this field will also profit from reading the book.



**Title:** *Endocrine Disruptors in the Environment*

**Author:** Sushil K. Khetan

**Hardcover:** 408 pages

**Publisher:** Wiley; 1 edition (June 23, 2014)

**Language:** English

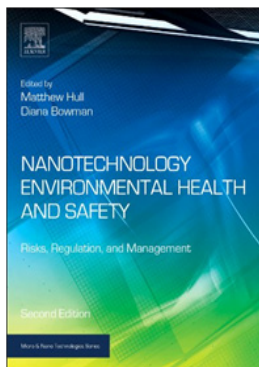
**ISBN-10:** 1118852931

**ISBN-13:** 978-1118852934

## Book Description

For most of the last decade, the science of endocrine disruption has evolved with more definitive evidence of its damaging potential to health and environment. This book lists the major environmental chemicals of concern and their mechanism of endocrine disruption including remedial measures for them.

Divided into three parts, *Endocrine Disruptors in the Environment* begins with an overview of the endocrine system and endocrine disruptors, discussing their salient features and presenting a historical perspective of endocrine disruption phenomena. It then goes on to cover hormone-signaling mechanisms, followed by various broad classes of putative endocrine disruptors, before introducing readers to environmental epigenetic modifications. Part two of the book focuses on removal processes of various EDCs by biotic and abiotic transformation/degradation. The last section consists of four chapters embracing themes on finding solutions to environmental EDCs—including their detection, regulation, replacement, and remediation.



**Title:** Nanotechnology Environmental Health and Safety,  
Second

**Edition:** Risks, Regulation, and Management

**Editors:** Matthew Hull, Diana Bowman

**Paperback:** 464 pages

**Publisher:** William Andrew; 2 edition (June 23, 2014)

**Language:** English

**ISBN-10:** 1455731889

**ISBN-13:** 978-1455731886

## Book Description

Nanotechnology Environmental Health and Safety, Second Edition focuses not only on the impact of nanotechnology and the discipline of nanotoxicity, but also explains each of these disciplines through in the context of management requirements and via risk scenarios - providing an overview of regulation, risk management, and exposure. Contributors thoroughly explain environmental health and safety (EHS) issues, financial implications, foreseeable risks (e.g., exposure, dose, hazards of nanomaterials), occupational hygiene, and consumer protection.

Key new chapters have been included covering eco-toxicity, nanomedicine, informatics, and future threats. New case studies have also been added, including a chapter on the impact of nanosilver on the environment, as well as an assessment of how well lessons have been learned from the past, such as in the case of asbestos. The book also makes a business case for the importance of proactive EHS management - essential reading for existing or prospective producers of nanoscale products.

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**Title:** PHEs, Environment and Human Health: Potentially harmful  
elements in the environment and the impact on human health

**Editors:** Claudio Bini, Jaume Bech

**Hardcover:** 467 pages

**Publisher:** Springer; 2014 edition (May 27, 2014) **Language:** English

**ISBN-10:** 9401789649

**ISBN-13:** 978-9401789646



## Book Description

This book is dedicated to the occurrence and behaviour of PHEs in the different compartments of the environment, with special reference to soil. Current studies of PHEs in ecosystems have indicated that many industrial areas near urban agglomerates, abandoned or active mines, major road systems and ultimately also agricultural land act as sources and at the same time sinks, of PHEs and large amounts of metals are recycled or dispersed in the environment, posing severe concerns to human health.

Thanks to the collaboration of numerous colleagues, the book outlines the state of art in PHEs research in several countries and is enforced with case studies and enriched with new data, not published elsewhere. The book will provide to Stakeholders (both Scientists Professionals and Public Administrators) and also to non-specialists a lot of data on the concentrations of elements in soils and the environment and the critical levels so far established, in the perspective to improve the environmental quality and the human safety.

## Calendar of Events

Conference Schedule	Name of Conference	Location
August 31-September 5, 2014	2014 International Aerosol Conference	Busan, Korea
September 26-27, 2014	21th International Conference on Aerosol & Science Technology/ Conference on Management Strategies and Monitoring of PM <sub>2.5</sub>	Kaohsiung, Taiwan
November 18-20, 2014	4th International Conference NANOSAFE 2014	Grenoble, France
April 12-15, 2015	2nd International Congress on Safety on Engineered Nanoparticles and Nanotechnologies - SENN 2015	Helsinki, Finland
September 6-11, 2015	European Aerosol Conference (EAC 2015)	Milan ,Italy

## Wallace Editing

TAAR has an agreement with Wallace Academic Editing to give a 10% discount on editing papers from the members of TAAR. Authors can mention the membership of TAAR to receive the discount.

Wallace Editing sites are:

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