

## **Chemical, Microbiological, Health and Comfort Aspects of Indoor Air Quality – State of the Art in SBS**

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# Chemical, Microbiological, Health and Comfort Aspects of Indoor Air Quality – State of the Art in SBS

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## **PREFACE**

Interest in indoor air quality (IAQ) is growing at a public, a political and a scientific level. Complaints about poor IAQ associated with acute symptoms such as mucous irritation, headaches and bad odour occur frequently and are of particular concern in the office environment where typical patterns of symptoms often occur and this has been termed "Sick Building Syndrome" (SBS) by a Working Group of the World Health Organization.

It is anticipated that over the next few decades, significantly more than the current percentage of 50% of the work force will be occupied in a non-industrial environment.

Although research into the causes for IAQ problems has increased over the past two decades, only some of the factors involved have actually been identified because of the complex, multifactorial nature of the problems. The knowledge of how to deal with and solve situations in which complaints arise is far from complete because of a lack of detailed information on the mechanisms leading to symptoms and also a lack of understanding of the dynamics of the indoor environment.

This book contains the lecture notes of a seminar aimed at presenting in depth state-of-the-art knowledge on factors presumably involved in SBS complaints to researchers who are actively involved in assessing and investigating IAQ problems related to SBS. Internationally known experts address the following issues:

- the dynamics of the indoor environment and strategies for indoor measurements
- chemical and microbiological pollution, important species, sources and detection methods
- effects of indoor pollution and in particular
  - sensory irritation including odour
  - airway, eye and skin irritation by organic indoor pollutants and assays for their assessment
  - immune effects including allergic sensitization
  - chemical hyper-responsiveness
- controlled human reactions to organic pollutants
- building investigations, approaches and results
- source characterization and source control
- criteria, norms and techniques against indoor pollution and regulatory aspects.

Studies into the causes and remedies of complaints on poor IAQ, in buildings, as seen from the above listing, are - probably more than any other research - dependent on multidisciplinary collaboration. Experts from very diverse fields such as construction engineering, architecture, ventilation/air conditioning, chemistry, biology, occupational hygiene, psychology, toxicology, epidemiology, environmental and occupational medicine must all contribute if progress is to be made. It is evident that communication between researchers coming from such diverse disciplines, all speaking their own language, is a difficult task. Communication however, is a prerequisite for collaboration. Therefore the seminar, the lectures of which are reproduced in this book was also aimed at promoting mutual understanding between researchers coming from different disciplines and, hopefully thereby stimulating future collaboration.

It is the editors' wish that this book, like the seminar, may provide state-of-the-art knowledge to the many experts involved in investigations of 'sick' buildings and how to make them 'healthy' and it may simultaneously help develop mutual understanding and collaboration between them.

H. Knöppel  
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