

## Preface

Contamination of soils and waters with chemicals poses a major environmental and human health problem. Phytoremediation uses living higher plants for cleaning up of environment contaminated with organic or inorganic pollutants by removing, sequestering, or chemically decomposing the pollutant. This method is still at its infancy and much R & D work has to be done to select the correct types of plants for the site to be remedied.

The papers in this special issue of the *Zeitschrift für Naturforschung C – A Journal of Biosciences* were presented during the workshop “Phytoremediation: Environmental and Molecular Biological Aspects” that was held among the ideal surroundings of the Guest House of the Hungarian Academy of Sciences in Matrahaza, from 9 to 12 September 2004.

The workshop was successful in bringing together research scientists working in different areas of environmental research. Participants (their number was limited at 60) came from Australia, Belgium, Czech Republic, France, Germany, Georgia, Hungary, Israel, Japan, Mexico, Poland, Serbia and Montenegro, Switzerland, The Philippines, United Kingdom, and the United States of America. There were 60 contributions (divided in 29 oral presentations and 31 poster presentations) reporting key advances in the theory and practice of phytoremediation of polluted soil and groundwater. The atmosphere of the workshop was highly stimulating as indicated by lively question and answer and panel discussion sessions. The scope of the workshop was also ambitious, without being over-diluted.

Major topics covered included:

- New Approaches for Phytoremediation – Agromomic/Physiological/Biochemical
- New Approaches for Phytoremediation – Molecular
- Transgenic Phytoremediation Agents – Are They/Can They Be Made Safe?

– Phytoremediation of Heavy Metals

– Phytoremediation of Organics

At the end of the formal presentations there was a concluding panel discussion which addressed important issues facing the practical application of phytoremediation. The use of transgenic plants in phytoremediation was given particular emphasis at the workshop in order to provide a view of the implications for future research activities. This special issue contains a refereed selection of 31 papers, all presented at the workshop.

As Guest Editors of this special issue, we would like to take this opportunity to gratefully acknowledge the financial support from the Organization of Economic Cooperation and Development (OECD) and from the Ministry of Environment of Hungary\*. This special issue came about due to the extraordinary efforts from all the authors, session chairpersons, discussion panel members, and unknown reviewers and thanks to the kind encouragement from Professors Ervin Balázs and Jonathan Gressel. We hope that these proceedings will provide an insight and a comprehensive starting point for the scientist entering the field of phytoremediation. Furthermore, this special issue should serve as a valuable reference to the latest developments for the experienced practitioner in the field and will encourage new researchers in this important area.

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*Guest Editors*

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\* The opinions expressed and arguments employed in this publication are the sole responsibility of the authors and do not necessarily reflect those of the OECD or of the governments of its member countries.