

## Preface of the Editors

Conservation and protection of works of art as well as of rare remnants of natural history has turned more and more into a race against time. Environments all over the world have become increasingly aggressive causing damage or at least deterioration to surfaces meant to be created for eternity. Conventional techniques do a lot against most of these dangers, but new approaches of high technology have to be explored to preserve the heritage of human civilization as well as the precious specimens of former life such as the feathers' of birds which died out generations ago.

Mechanical and chemical methods are involved in traditional conservation treatments. Contactless cleaning by lasers, on the other hand, is a new and prospering field of laser materials processing. It allows to avoid mechanical disruption and the disadvantage of cleaning fluids - may they be toxic or just water - which could cause potentially long-term degradation of the substrate or health hazards. Moreover, laser cleaning may have the potential to accelerate conservatory work with high quality and moderate costs, and, thus, may help archives', museums' and collections' strained budgets.

Laser cleaning of semiconductors, microstructures in the automotive, and aerospace industries has already been motivated by cost savings, yield enhancement, and environmental concerns so that substantial literature about laser processing and cleaning of technical surfaces has accumulated in scientific and technological journals in recent years. This wealth of knowledge and experience, however, is usually not accessible to the conservation, museum, and archivation community. Therefore, this special issue of the *Restauratorenblätter*, „Lasers in the Conservation of Artworks“, is not only dedicated to the traditional reader of this well-established series of conservation research, but also to scientists and engineers. This is reflected by the proficiency and background of the present volume's authors. Most of them met at a meeting arranged by Costas Fotakis who initiated the „First International Workshop on Lasers in the Conservation of Artworks“ (LACONA I), held October 4-6, 1995, at Heraklion, Crete, Greece. There, it has been decided to form the editorial committee responsible for editing the oral contributions. It took a considerable time until a publisher was convicted to issue the world's first monograph of the entire field of lasers in the conservation of artworks.

We present an overview of laser cleaning of stone artifacts, i.e. sculptures, facades, and mural paintings. Actually, most of the experience with lasers has been accumulated in this discipline. Very new and recent results on stained glass, metals, paintings, paper and parchments follow these chapters. Reports on other laser conservation techniques and technology besides cleaning, like e.g. holography, round up this monograph. All contributions have been seriously refereed by more than one reader and edited by chemists, physicists, laser conservators, and art historians, who have not been able to accept all the oral contributions of the world's first comprehensive meeting in this field.

The world-wide interest in laser cleaning encouraged the editors to set up a second volume „Lasers in the Conservation of Artworks II“ under the auspices of the same publisher based on contributions at the „Second International Conference on Lasers in the Conservation of Artworks (LACONA II)“ held April 23-25, 1997, at Liverpool.

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