

Preface

Science and art are increasingly interconnected and their natural meeting ground is heritage science, a recent field devoted to the study, preservation and enhancement of cultural heritage. This encounter is particularly relevant in contemporary art, where, in an interdisciplinary context, different knowledge, tools, techniques, methodologies and experiences are combined to better understand the esthetical and physical complexity of the artworks made up of natural and synthetic organic, inorganic and hybrid materials, pure and in mixture, intentionally assembled by artists in the most diverse conformations.

This volume, "Science and Art. The contemporary painted surface", in continuity with the previous volume published by the Royal Society of Chemistry in 2014, "Science and Art. The painted surfaces", consists of a series of chapters, mostly co-written by scientists, art historians, conservators/curators, with the peculiarity of often including authorship of, and interviews with, the artists themselves. Topics covered include execution techniques, diagnostics, conservation, conceptual aspects and languages, described in such a way as to interest specialists, but also to be accessible to students and art lovers in general.

The book is composed of twenty-three chapters. It opens with a focus on artists already historicized, such as Jackson Pollock, Piero Manzoni, Lucio Fontana, Enrico Baj and Joseph Albers. These masters can be considered as *avant-garde* of the contemporaneity with their use of unconventional materials vehiculating innovative languages. Then, the core of the volume is made up of examinations and discussions on works of contemporary artists, considering the sixties as the starting point of contemporaneity. These painters and sculptors, all protagonists of the development of new ideas and techniques, belong to thirteen different countries and have been selected to offer a wide vision of how innovations in contemporary art have been conjugated in various regions and cultures. Materials and practices of masters such as David Hockney, Gary Hume, Avinash Chandra, Cai Guo-Qiang, Jan Fabre, Eduardo Kac, Miquel Barceló, Sarah Lucas, Fabrizio Plessi, Loris Cecchini, Tim Otto Roth, Ângelo de Sousa, Julião Sarmento, Lourdes Castro, Juan Melé, Gregorio Vardánega, Raúl Lozza, Judith Lauand, Lina Bo Bardi, Gunter Gerzso, José Gutiérrez and Alina Szapocznikow are presented and discussed, corresponding to artists who worked or are currently working in countries including the United States, Great Britain, India, China, Germany, Belgium, Spain, Italy, Brazil, Argentina, Mexico, Portugal, France and Poland.

The last three chapters are dedicated to contemporary industrial design, net-art and the painted surface in contemporary architecture.

Each contemporary artist chooses a personal way of expression among virtually infinite numbers of possibilities and combinations, on the basis of preferences on technical aspects or other predilections, adopting a variety of practices that are generally related to traditions, memories or individual inspirations. These choices are the common thread that runs through all the chapters.

In some of them it is shown how a large variety of oil-containing paints, composed of semi- or non-drying oils mixed with linseed oil, or of synthetic resins (alkydic, vinylic and acrylic) in different formulations, have been employed by contemporary artists with the aim of achieving specific effects on polychrome surfaces. In several cases these materials, intentionally prepared or used as ready-made industrial paints, are proven to be linked to the conservation problems exhibited by the pictorial layers. Actually, in contemporary art the unprecedented richness of choices available to artists finds a counterpart in alterations and changes in appearance that can be more chemically complex than in traditional paintings.

Singular and fascinating is the use of gunpowder as a medium for drawings, or of coloured gunpowder, commonly also used to create spectacular pyrotechnic displays, to paint unique polychrome works on canvas. Accurate studies provided chemical information on used gunpowder, nature of products after deflagrations and their likely changes with time. Unusual applications include the exploitation of polymers, as for example poly-methyl-methacrylates, polyesters and polyurethanes for the creation of sculptures, taking advantage of their chemical properties, colour, and transparency.

Some of the chapters deal with themes elaborated on by artists in a conceptual way through multiple techniques and supports, including film, video-performances and video-installations, discussed in relation to the conservation of the works. Other chapters describe the exploration of effects and perception of light and colour in space, or even the assemblage of forms and structures reminiscent of chemistry and biology that dialogue with the environment. All these works are explorations of territories where art and science, natural complexity and artificial systems, subject and language interweave together.

A significant group of chapters reports on reflections and experiences, from different perspectives, on the topic of restoration of contemporary art, showing how science can contribute towards disentangling crucial problems regarding properties and complexity of employed materials and technologies, whose knowledge is essential in restoration to plan and develop decisive interventions. Restoration is also strongly linked to the protection of the identity of the work and of the rights of the artist. From this point of view, in contemporary art two fundamental questions must be addressed: that of the restoration which intervenes on permanent works, and that of the restoration which involves works destined for decay by intention of the author. As is shown in the book, in both cases there are potentially problematic situations that must be tackled and solved before any intervention: the first in relation to interventions that must not change the meaning of the work according to the intention of the artist; the other in relation to operations that, against the artist's purpose, affect the self-destructive nature of the artefact, as happens in works where the fundamental subject is natural decomposition or the ephemeral of the present.

This book, while obviously not exhaustive, aims to offer a general look at how the latest technological advances and the advent of new ideas and concepts have been translated by contemporary artists into material choices, executive practices and languages. Within this framework, it also shows that holistic studies that integrate scientific, technical and historical-artistic research on contemporary works of art, can open the way to new perceptions and unprecedented understanding of the creative process. In particular, when these studies are further combined with discussions with artists, they can provide additional information, otherwise impossible to attain, about details of unusual procedures or hidden intentions and meanings. Interviews can also reveal fundamental key aspects on the attitudes and thoughts of each artist towards the ineluctable problems of aging and conservation.

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