

NARDINI EDITORE FOR CULTURAL HERITAGE AND ARTS
NARDINI EDITORE PER I BENI CULTURALI E L'ARTE

Novità / New issue

CHEMISTRY FOR RESTORATION

Painting and Restoration Materials

By Mauro Matteini, Rozzo Mazzeo, Arcangelo Moles

New Edition. Pages 372, paperback, cm 17×24, illustrations in black and white, 20 color plates

Isbn/Ean code: 9788840444505

Cover price: 54,00 euro

THE BOOK

AVAILABLE FROM
JUNE 23RD
BUY IT NOW
WITH THE
SPECIAL
25% DISCOUNT!

DISPONIBILE DAL
23 GIUGNO
ACQUISTARLO
ORA
CON LO SCONTO
SPECIALE
DEL 25%!

We consider the production of a specific book, Chemistry for Restoration, addressing all general and applied issues of chemistry, the "alien" scientific discipline primarily involved in conservation, instrumental in collecting and organising the many experiences and advancements that during recent decades have often been accumulated in a disorganised manner. Of course this book is also useful in addressing educational and training needs. Today, schools of conservation and restoration are present all over the world. Young students who choose this type of professional activity should be trained, from the very beginning, within the typical interdisciplinary environment that characterizes the conservation of cultural heritage. This chemistry book dedicated to conservation and restoration aims at communicating and transferring to this field specifically addressed and targeted notions and concepts, without losing sight of a high scientific level...

CONTENTS:

Presentations
Giorgio Bonsanti
Brunetto Giovanni Brunetti
Michel Menu

Foreword

PART I

PAINTING MATERIALS AND PRODUCTS FOR RESTORATION

Chapter one

PIGMENTS

- 1.1 – Pigments and dyes
 - 1.2 – Optical properties – The colour
 - 1.2.1 – Electromagnetic radiations and visible light
 - 1.2.2 – Colour formation
 - 1.2.3 – Light sources
 - 1.2.4 – Sensitivity of the human eye and the perception of colour as a physiological effect of the eye
 - 1.2.5 – Interaction light/materials
 - 1.2.6 – Light and paint layer
 - 1.2.7 – Mixture of pigments
 - 1.3– Chemical properties
 - 1.4– Other pigments' properties
 - 1.5– Pigment classifications – Descriptive entries
 - 1.5.1 – White pigments
 - 1.5.2 – Violet pigments
 - 1.5.3 – Blue pigments
 - 1.5.4 – Green pigments
 - 1.5.5 – Yellow pigments
 - 1.5.6 – Red and orange pigments
 - 1.5.7 – Brown pigments
 - 1.5.8 – Black pigments
 - 1.5.9 – Metals
- Reference bibliography

Chapter two

BINDING MEDIA

- 2.1- Physical, optical and chemical properties of binding media
- 2.2 – The historical use of binding media
- 2.3 – Tempera
 - 2.3.1 – Proteins
 - 2.3.2 – Animal glues
 - 2.3.3 – Egg
 - 2.3.4 – Casein and milk
 - 2.3.5 – Polysaccharides
 - 2.3.6 – Polysaccharide temperas
 - 2.3.6.1 – Vegetable gums
 - 2.3.6.2 – Starches and dextrans
- 2.4 – Drying oils
- 2.5 – Mixed painting techniques

2.6 – Modern synthetic binders
Reference bibliography

Chapter three

SOLVENTS AND SOLUTIONS

3.1 – Introduction

3.2 – Solutions

3.3 – The solubilisation process

3.4 – The concept of solubility

3.5 – Solubilisation mechanisms

3.5.1 – Solubilisation of crystalline solids

3.5.2 – Solubilisation of non-crystalline solids

3.6 – Solvent power

3.7 – Other properties of solvents

3.7.1 – Vapour pressure, boiling point, volatility,
retention

3.7.2 – Surface tension, wettability, surfactants,
emulsifiers

3.7.3 – Viscosity of solvents and solutions

3.7.4 – Flammability, toxicity

Reference bibliography

Chapter four

CLEANING AGENTS AND SYSTEMS

4.1 – Classification and characteristics of most common
solvents

4.1.1 – Hydrocarbons

4.1.2 – Halogenated hydrocarbons

4.1.3 – Alcohols

4.1.4 – Ethers

4.1.5 – Esters

4.1.6 – Ketones

4.1.7 – Aldehydes

4.1.8 – Ammonia and derivatives

4.1.9 – Other solvents

4.2 – Reactive solvents

4.3 – Selection of solvent

4.3.1 – Feller's solubility test

4.4 – Enzymes

4.5 – Bacteria

4.6 – Ion exchange resins

4.7 – Laser cleaning

4.8 – Emulsions and surfactants

4.9 – Resin soaps

4.10 – Solvent-gels

Reference bibliography

Chapter five

VARNISHES, ADHESIVES, CONSOLIDANTS, FILLERS

5.1 – Introduction

5.2 – Natural resins

5.2.1 – Chemical and physical properties

5.2.2 – Classification of natural resins

5.2.3 – Oleoresins and balsams

5.2.4 – Resins

5.2.5 – Copals, amber and other fossil resins

5.2.6 – Resins from animals

5.3 – Synthetic resins

5.3.1 – Polyaddition resins

5.3.2 – Polycondensation resins

5.3.3 – Cellulose and cellulose derivatives

5.3.3.1 – Cellulose

5.3.3.2 – Cellulose derivatives

5.4 – Waxes

5.4.1 – Classification of waxes

5.5 – Varnishes and protective coatings

5.5.1 – General remarks

5.5.2 – Spirit varnishes: film-forming mechanism

5.5.3 – Properties of varnishes

5.5.3.1 – Protective functions

5.5.3.2 – Optical-aesthetic functions

5.5.4 – Varnish composition and other properties

5.6 – Adhesives, consolidants and fillers

5.6.1 – Adhesives

5.6.1.1 – Mechanisms of chemical adhesion

5.6.1.2 – Properties of adhesives

5.6.1.3 – Classes of adhesives

5.6.2 – Consolidants

5.6.2.1 – Mechanisms of "setting"

5.6.2.2 – Properties of consolidants

5.6.2.3 – Consolidants applied in restoration practice

5.6.3 – Fillers

5.6.3.1 – Mechanical properties

5.6.3.2 – Porosity

5.6.3.3 – Problems of reversibility

5.6.3.4 – Adhesive properties

5.6.3.5 – Hardening time

5.6.3.6 – Shrinkage

5.6.3.7 – Types of fillers

5.6.3.8 – Adhesives and fillers of mineral-origin (limes

and cements)

Reference bibliography

PART II

BASICS OF CHEMISTRY

Chapter one

STRUCTURE OF MATTER AND INORGANIC CHEMISTRY

- 1.1 – The atomic structure of matter
- 1.2 – Chemical elements, compounds and mixtures
- 1.3 – Atomic structure
- 1.4 – Orbitals, electronegativity, chemical bonds
- 1.5 – Intermolecular bonds. Hydrogen bond
- 1.6 – Valence, oxidation number and oxidation state
- 1.7 – Aggregation states of matter
- 1.8 – Heterogeneous mixtures
- 1.9 – Chemical compounds and their nomenclature
- 1.10 – Oxides
- 1.11 – Acids and bases
- 1.12 – Measure of acidity – pH
- 1.13 – Strengths of acids and bases
- 1.14 – Salts
- 1.15 – Amphoteric behaviour
- 1.16 – Hydrolysis

Chapter two

CHEMICAL REACTIONS

- 2.1 – Concept of chemical reaction
- 2.2 – Exothermic and endothermic reactions
- 2.3 – Catalysis
- 2.4 – Types of chemical reactions

Chapter three

BASICS OF ORGANIC CHEMISTRY

- 3.1 – Organic compounds
- 3.2 – Classification of organic compounds
- 3.3 – Hydrocarbons, nomenclature and properties
- 3.4 – Isomerism
- 3.5 – Halogenated hydrocarbons
- 3.6 – Alcohols
- 3.7 – Ethers
- 3.8 – Aldehydes and ketones
- 3.9 – Carboxylic acids
- 3.10 – Esters

3.11 – Amines
3.12 – Macromolecules – Polymerization

Reference bibliography

Index

NARDINI EDITORE - Via delle Vecchie Carceri, snc - 50122 Firenze Italy
Tel +39 (0)55 24 76 080 - Mail: info@nardineditore.it

Dal 1970 Nardini Editore vuol dire editoria di qualità. Arte, architettura, restauro e conservazione, cultura dell'alimentazione, territorio e viaggio, musica d'arte, letteratura, saggistica, narrativa, poesia, grandi opere.

Since 1970 Nardini Editore means quality books. Art, Architecture, Restoration and Cultural Heritage, Food & Wine, Cultural Travel, Music of the 20th Century, Literature, Essays, Fiction, Poetry

Visita il nostro catalogo online - Visit our catalogue online

www.nardineditore.it

ALCUNI TITOLI DEL NOSTRO CATALOGO / A SELECTION FROM OUR CATALOGUE

Pittura su pietra. Diffusione, studio dei materiali, tecniche artistiche

<http://www.nardineditore.it/prodotto/pittura-pietra-diffusione-materiali-tecniche-artistiche/>

Atlante dei dissesti delle strutture lignee. Atlas of the Failures of Timber Structures

<http://www.nardineditore.it/prodotto/atlante-dei-dissesti-delle-strutture-lignee-atlas-of-the-failures-of-timber-structures/>

**Atlante delle malte antiche in sezione sottile al microscopio ottico.
Atlas of the Ancient Mortars in thin section under optical microscope**

<http://www.nardineditore.it/prodotto/atlante-malte-antiche-atlas-ancient-mortars/>

Caravaggio's Painting Technique. Proceedings of the CHARISMA workshop

<http://www.nardineditore.it/prodotto/caravaggios-painting-technique-proceedings-of-the-charisma-workshop/>

Indoor Environment and Preservation. Climate control in museums and historic buildings – Ambiente interno e conservazione. Il controllo del clima nei musei e negli edifici storici

<http://www.nardineditore.it/prodotto/indoor-environment-and-preservation-ambiente-interno-e-conservazione/>

Il restauro silenzioso. La conservazione preventiva: un sistema sostenibile di gestione e controllo

<http://www.nardineditore.it/prodotto/il-restauro-silenzioso-la-conservazione-preventiva-un-sistema-sostenibile-di-gestione-e-controllo/>

Landscape as Architecture. Identity and conservation of Crapolla cultural site

<http://www.nardineditore.it/prodotto/landscape-as-architecture-identity-and-conservation-of-crapolla-cultural-site/>

Diagnostic and Imaging on Musical Instruments

<http://www.nardineditore.it/prodotto/diagnostic-imaging-musical-instruments-book/>

Restoration and Conservation of Early musical instruments. The spinetta ovale by Bartolomeo Cristofori - Restauro e Conservazione degli Strumenti Musicali Antichi. La spinetta ovale di Bartolomeo Cristofori

<http://www.nardineditore.it/prodotto/restauro-e-conservazione-degli->

[strumenti-musicali-antichi/](#)

Funghi e insetti nel legno. Diagnosi, Prevenzione, Controllo

<http://www.nardineditore.it/prodotto/funghi-e-insetti-nel-legno/>

Il restauro della fotografia. Materiali fotografici e cinematografici, analogici e digitali

Ebook in formato pdf - Ebook in pdf format

<http://www.nardineditore.it/prodotto/il-restauro-della-fotografia-materiali-fotografici-e-cinematografici-analogici-e-digitali/>

Restoration of Amundsen's lantern slides The polar explorations between history and public lectures

<http://www.nardineditore.it/prodotto/restoration-of-amundsens-lantern-slides-the-polar-explorations-between-history-and-public-lectures/>

Dizionario del restauro. Tecniche diagnostica conservazione

<http://www.nardineditore.it/prodotto/dizionario-del-restauro-tecniche-diagnostica-conservazione/>

La Biologia Vegetale per i Beni Culturali – Vol. I. Biodeterioramento e Conservazione

<http://www.nardineditore.it/prodotto/la-biologia-vegetale-per-i-beni-culturali-vol-i/>

Archeometria e restauro. L'innovazione tecnologica

<http://www.nardineditore.it/prodotto/archeometria-e-restauro-linnovazione-tecnologica/>

Science and Conservation for Museum Collections

<http://www.nardineditore.it/prodotto/science-and-conservation-for-museum-collections/>

Encaustic Wall Painting. How to Execute an Encaustic Painting on a

Terracotta Support Following Recipes in Classical Sources

<http://www.nardineditore.it/prodotto/encaustic-wall-painting-how-to-execute-an-encaustic-painting-on-a-terracotta-support-following-recipes-in-classical-sources/>

ESRARC 2016 – 8th European Symposium on Religious Art, Restoration & Conservation. Proceeding book

<http://www.nardineditore.it/prodotto/esrarc-2016-8th-european-symposium-on-religious-art-restoration-conservation-proceeding-book/>

I Ruleri e la guerra. Memoria, ricostruzioni, restauri

<http://www.nardineditore.it/prodotto/i-ruleri-e-la-guerra-memoria-ricostruzioni-restauri/>

The wall paintings of the Great Mosque of Isfahan

<http://www.nardineditore.it/prodotto/the-wall-paintings-of-the-great-mosque-of-isfahan-2/>

Il Colore Negato e il Colore Ritrovato. Storie e procedimenti di occultamento e descialbo delle pitture murali

<http://www.nardineditore.it/prodotto/il-colore-negato-e-il-colore-ritrovato-storie-e-procedimenti-di-occultamento-e-descialbo-delle-pitture-murali-2/>

Encausto. Storia, Tecniche e Ricerche

Encaustic. History, Technique and Research

<http://www.nardineditore.it/prodotto/encausto-storia-tecniche-e-ricerche/>

Bollettino ICR 32 - Istituto Superiore per la Conservazione e il Restauro

<http://www.nardineditore.it/prodotto/bollettino-icr-32/>