

Contents

Preface — V

List of contributors — XV

Volume 1

Robert Christie and Adrian Abel

1 Anthraquinonoid pigments — 1

Heinz Mustruph

2 Apocyanine dyes — 15

Robert Christie

3 Azo (Hydrazone) pigments: general principles — 19

Gerhard Pfaff

4 Bismuth vanadate pigments — 29

Gerhard Pfaff

5 Black pigments — 35

Gerhard Pfaff

6 Cadmium sulfide / selenide pigments — 37

Gerhard Pfaff

7 Carbon black pigments — 43

Robert Christie and Adrian Abel

8 Carbonyl pigments: general principles — 61

Robert Christie and Adrian Abel

9 Carbonyl pigments: miscellaneous types — 69

Robert Christie and Adrian Abel

10 Cationic (Basic) dye complex pigments — 83

VIII — Contents

Gerhard Pfaff

11 Ceramic colors — 95

Gerhard Pfaff

12 Cerium sulfide pigments — 103

Gerhard Pfaff

13 Chromate and molybdate pigments — 107

Gerhard Pfaff

14 Chromium oxide pigments — 113

Andrew Towns

15 Colorants: general survey — 119

Gerhard Pfaff

16 Colorants in building materials — 149

Frank J. Maile

17 Colorants in coatings — 161

Ghita Lanzendörfer-Yu

18 Colorants in cosmetic applications — 245

Gerhard Pfaff

19 Colorants in plastic applications — 287

Thomas Rathschlag

20 Colorants in printing applications — 311

Gerhard Pfaff

21 Colored pigments — 345

Werner Rudolf Cramer

22 Color fundamentals — 353

Index

Volume 2

Werner Rudolf Cramer

23 Color measurement — 407

Heinz Mustroph

24 Cyanine dyes — 465

Andrew Towns

25 Diarylethene dyes — 503

Robert Christie and Adrian Abel

26 Diketopyrrolopyrrole (DPP) pigments — 525

Robert Christie and Adrian Abel

27 Dioxazine pigments — 535

Robert Christie and Adrian Abel

28 Disazo (Bishydrazone) condensation pigments — 543

Robert Christie and Adrian Abel

29 Disazo (Bishydrazone) pigments based on acetoacetanilides — 555

Robert Christie and Adrian Abel

30 Disazo (Bishydrazone) pigments based on pyrazolones — 571

Heinz Mustroph

31 Dyes: quantum chemical calculation of electronic spectra — 577

Gerhard Pfaff

32 Effect pigments — 605

Heinz Langhals

33 Fluorescence and fluorescent dyes — 611

Andrew Towns

34 Fulgide dyes — 651

X — Contents

Heinz Mustroph

35 Hemicyanine dyes — 671

Heinz Mustroph

36 Hemioxonol dyes — 685

Magdalene Gärtner

37 Historical pigments, dyes and binders — 691

Heinz Mustroph and Andrew Towns

38 Indophenol and related dyes — 749

Gerhard Pfaff

39 Inorganic luminescent pigments — 765

Gerhard Pfaff

40 Iron blue pigments — 777

Gerhard Pfaff

41 Iron oxide pigments — 783

Heinz Mustroph

42 Merocyanine dyes — 799

Robert Christie and Adrian Abel

43 Metal complex pigments — 815

Gerhard Pfaff, Michael R. Bartelt and Frank J. Maile

44 Metal effect pigments — 829

Index

Volume 3

Gerhard Pfaff

45 Mixed metal oxide pigments — 849

Robert Christie and Adrian Abel

46 Monoazo (Monohydrazone) pigments based on acetoacetanilides — 859

Robert Christie and Adrian Abel

47 Monoazo (Monohydrazone) pigments based on benzimidazolones — 871

Robert Christie and Adrian Abel

48 Monoazo (Monohydrazone) pigments based on 2-naphthol and derivatives — 885

Andrew Towns

49 Naphthopyran dyes — 909

Robert Christie and Adrian Abel

50 Organic pigments: general principles — 925

Gerhard Pfaff

51 Oxonitride pigments — 955

Heinz Mustroph

52 Oxonol dyes — 959

Robert Christie and Adrian Abel

53 Perylene and perinone pigments — 967

Andrew Towns

54 Photochromic dyes — 979

Robert Christie and Adrian Abel

55 Phthalocyanine blue pigments — 1015

Robert Christie and Adrian Abel

56 Phthalocyanine green pigments — 1029

Robert Christie and Adrian Abel

57 Phthalocyanine pigments: general principles — 1035

Uwe Hempelmann

58 Pigments: general aspects — 1041

Heinz Mustroph

59 Polymethine dyes — 1057

Robert Christie and Adrian Abel

60 Quinacridone pigments — 1071

Gerhard Pfaff

61 Special effect pigments — 1081

Andrew Towns

62 Spirooxazine dyes — 1105

Andrew Towns

63 Spiropyran dyes — 1125

Heinz Mustroph

64 Streptocyanine dyes — 1153

Heinz Mustroph

65 Streptomerocyanine dyes — 1165

Gerhard Pfaff

66 Titanium dioxide pigments — 1177

Gerhard Pfaff

67 Transparent pigments — 1195

Gerhard Pfaff

68 Ultramarine pigments — 1203

Gerhard Pfaff

69 White pigments — 1211

Gerhard Pfaff

70 Zinc oxide pigments — 1213

Gerhard Pfaff

71 Zinc sulfide pigments — 1219

Index