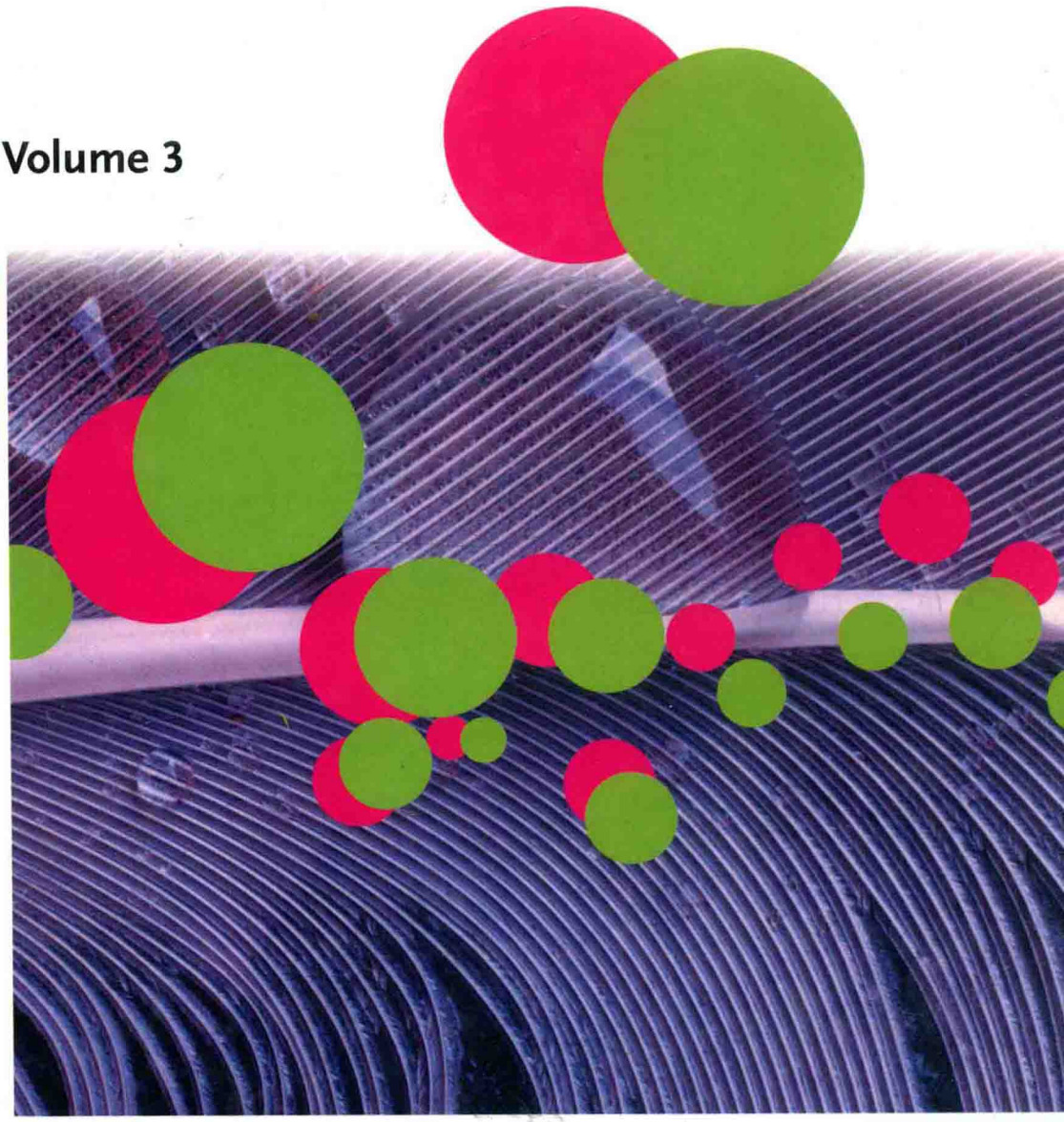
Colloids and Interface Science Series

Edited by Tharwat F. Tadros

WILEY-VCH

Colloid Stability and Application in Pharmacy

Volume 3



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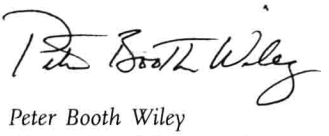

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Preface

Volume 3 of this series is dedicated to the subject of colloid stability and some of the colloid and interface applications in Pharmacy. The volume consists of thirteen chapters that cover diverse topics. Only three chapters are directly relevant to applications in Pharmacy: Chapter 2 describes the solubilization of poorly insoluble drugs by micellar solutions, whereas Chapter 13 gives an interesting application of nano-particles for drug delivery to the brain. These two chapters were dedicated to Professor A.T. Florence on the occasion of his 65th birthday. The third chapter that is relevant to application to Pharmacy is that on controlling the stability of liposomal colloids. This chapter was dedicated to Professor D. Exerowa and Professor D. Platikanov on the occasion of their 70th birthday. The remaining ten chapters cover wide range of topics: Chapter 1 describes the preparation of iron oxide nano-particles. This gives a comprehensive review of 55 pages on the subject. Chapter 4 describes a mathematical model of coagulation and flocculation. Chapter 5 deals with emulsion stability and interfacial properties. It gives a good account on the correlation between emulsion stability and physicochemical parameters. Chapter 6 describes wetting film dynamics and stability. The mechanism of film rupture is well described. Measurement of surface forces using the atomic force microscope is reviewed in Chapter 7, whereas Chapter 8 deals with a specific topic of ion specificity in colloidal systems. The stabilization of thin films, emulsions and bifluid gels with surface-active solid particles is reviewed in Chapter 9 with particular reference to the use on nanoparticles. Chapter 10 deals with the DLVO and structural forces in nanofilms containing polyelectrolytes, whereas Chapter 11 describes the association between polyelectrolytes and oppositely charged surfactants both in bulk solution and at the solid/liquid interface. The use of nonionic micelles for stabilization of foams, emulsions and suspensions is described in Chapter 12.

I should mention that ten of the thirteen chapters in this volume are dedicated to Professor Exerowa and Professor Platikanov. Their biography was given in Volumes 1 and 2 of this series and hence this is not reproduced in this volume. As mentioned above two chapters are dedicated to Professor Florence. The only independent chapter is that by Ignác Capek (Chapter 1) which I decided to include in this volume due to its important application in nano-technology.

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I would like to thank all the authors for their dedication in producing these excellent reviews, which made my editing task fairly easy. I would like to thank the staff of Wiley-VCH for producing this volume quickly.

Wokingham, April 2007

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Editor of the Series

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