This book attempts to integrate surfactant science into the art of drug delivery. Do not forget, though, that pharmaceutical scientists should already process quite a lot of knowledge about surfactants and their use in drug delivery systems. Although the tone of this book is fine, I cannot help but feel that the author is trying to explain the basics of colloid science to a reader who knows nothing about it. The contents of the various chapters of this book should therefore, already be well-known in pharmaceutical circles. I doubt if it is necessary to have a sort of summary of quite mixed scientific level that is offered in this book.

Initially the author describes surfactants, micelles and liquid crystals. It is interesting reading, but was not for me particularly helpful. Following are individual chapters on liposomes, micro-emulsions, and aerosols. There are much more comprehensive studies of these systems available in the pharmaceutical literature. The same is true of the last three chapters dealing with the use of polymers in pharmacy. I am just not sure that the interested pharmaceutical researcher would find new information of value to him here. The last chapter of the book deals in a very superficial manner with the spray-drying and the freeze-drying of formulations containing surfactants and polymers, and is definitely not too exciting.

Of course, it is always nice to have books such as these available in the Department library. I am certain I could use some of the diagrams in my lecture on Pharmaceutical Technology and Biopharmaceutics. I would not, however, buy the book.

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Physical Chemistry of Foods
By Pieter Walstra; Food Science and Technology; vol. 121; Marcel Dekker, New York, Basel, 2003, 807 pages; ISBN 0-8247-9355-2 (US$ 95)

This is really a text book of food physics. As Peter Walstra says in his Preface, it can be used as a basis for a course for food science undergraduates, but also overlaps somewhat into the field of postgraduate studies. Indeed, it is really a reference book covering a large number of different subjects inside physical chemistry which are otherwise to be found scattered in individual specialist volumes. As such, this is really quite a handy reference work for a pharmaceutical scientist working either in industry or commencing a research project.

After a brief but very readable introduction to relevant aspects of thermodynamics we find chapters on interactive forces, reaction kinetics, and transport phenomena. These are all extremely well and clearly written and readily understandable at the undergraduate level. Two chapters follow considering polymer and protein science. Again, succinct overviews are given. The physical chemistry of dispersed systems is then considered in some detail. After an introductory chapter on surface phenomena, there are several chapters on emulsions and foams, colloidal interactions, changes in dispersity including instability of dispersed systems, and nucleation phenomena. With admirable clarity Walstra describes quite complex physical–chemical events and makes them clearly understandable. Of course, the disadvantage of this style of presentation is its simplicity and lack of scientific rigorousness at the research level. However, I would certainly not express this as a criticism of the book in any way. The last three chapters of the book consider crystallization, glass transitions, and semi-solids. The areas of common interest between food sciences and pharmaceutics are especially evident in these chapters.

This is a really admirable book and suitable for anyone looking for a concise source of information about physical chemistry relevant to pharmaceutics. It is certainly useful at an undergraduate level; and many postgraduate students would be wise to work through its chapters!

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Amorphous food and pharmaceutical systems
Harry Levine (Ed); The Royal Society of Chemistry, London, 2002, 346 pages; ISBN 0-85404-866-9, £99.50

We pharmaceutical researchers and developers who are interested in stabilizing and formulating protein pharmaceuticals are perpetually interested in the amorphous state. Our colleagues in the 'Light Brigade' (i.e. those working with low molecular weight actives) know the amorphous state only as something to be avoided. We 'Heavy Brigaders' (i.e. working with high molecular weight actives) know, however, its true value, whilst recognizing

fully its complications. The book *Amorphous Food and Pharmaceutical Systems* contains a series of monographs giving an invaluable summary of the state of acknowledge in this field up to 2001/2002. It is therefore in many ways the successor to Blanshard's *Glassy State in Foods*, which is by now 10 years old. If you are in any way involved with stabilizing proteins in glassy systems, or are simply interested in glassy state dynamics, then you must have this book.

The book contains numerous, highly informative chapters divided up into logical sections. Thus we have contributions to structure and significance of amorphous materials, glassy state dynamics, technological studies of unstable aqueous systems, glassy states in foods and pharmaceuticals, questions of residual moisture, and experimental methods to study amorphous systems. We find contributions of superior quality in all sections. This is indeed to be expected with contributors such as Levine, Slade, Pikal, Franks, and Zografi.

I will keep it brief. This is an excellent volume, and anyone from the 'Heavy Brigade' interested in the glassy state for stabilizing biologicals must have it in his library. Even Lord Raglan would have liked it.

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