in retrospect, it is astonishing that the idea of a cooperation never arose despite the occasional proximity of their research areas. A clear demarcation of the research interests was of greater importance at the time of the pioneers.

The editors deserve thanks for the careful editing of the letters, which are now available to a broad audience in this small book.

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Protein-Based Surfactants. Synthesis, Physicochemical Properties, and Applications. Edited by *Ifendu A. Nnanna* and *Jiding Xia.* Marcel Dekker, New York 2001. 312 pp., hardcover $ 150.00.—ISBN 0-8247-0004-X

Protein-based surfactants—fundamental research topic or area of application with a high potential? Ifendu A. Nanna and Jiding Xia try to give an answer to this question. The book describes the synthesis of protein-based surfactants, their physicochemical properties, potential applications, and significant developments. Numerous research projects have been carried out with this class of surfactants, especially in recent years, which is reflected in the great number of publications. Most of these are of a fundamental character and demonstrate interesting properties of this type of surfactant.

The subject of protein surfactants, which is an aspect of the trend towards mild and biodegradable surfactants, is described in ten clearly arranged chapters. Following a general introduction in Chapter 1, Chapters 2–8 cover different topics of protein-based surfactants. Chapter 2 describes the production of protein-based surfactants by enzymatic modification of agricultural by-products and natural raw materials. A review of the interaction of proteins at interfaces is given in Chapter 3. Chapter 4 summarizes the chemistry, synthesis, and properties of amino acid surfactants. Amphoteric surfactants and the enzyme-catalyzed synthesis of protein-based surfactants are the topics of Chapter 5. Arginine lipopeptide surfactants show antimicrobial activity depending on the chemical structure (Chapter 6), and Chapter 7 reviews research on fluorinated synthetic surfactants based on amino acids. These chapters are followed by a summary of the interaction of amino acid based surfactants with other compounds (Chapter 8). There are only a few examples of a successful transfer of protein-based surfactants to applications, which is partly explained by their high cost. The applications of protein-based surfactants described in Chapter 9 are therefore to be regarded more from the viewpoint of future perspectives, as explained in Chapter 10 which discusses market developments and trends for amino acid based and protein-based surfactants.

The authors of the individual chapters include some engaged in fundamental research and others working on industrial applications, thus providing a broad survey of the topic from different points of view. In summary, the book gives a very good overview for someone who is interested in getting basic information about protein-based surfactants. The different chapters complement each other quite well. It would be even better but for the fact that several chapters have similar introductions. However, as the introductory parts of each chapter are quite short, this is only a minor point. Readers who are interested in finding more detailed information can use the bibliographies appended to the chapters. These include references up to 1999, with a main focus on publications up to 1997/1998. The main emphasis of the topics discussed is more on synthesis and applications than on the physicochemical properties of protein-based surfactants. The book is easy to read. Previous knowledge of protein-based surfactants and surfactant chemistry in general is not necessary, and therefore the book can be recommended for all who are interested in getting a general overview of the subject.

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