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volume 44

ORGANIZED SOLUTIONS

Surfactants in Science and Technology

edited by
Stig E. Friberg
Björn Lindman

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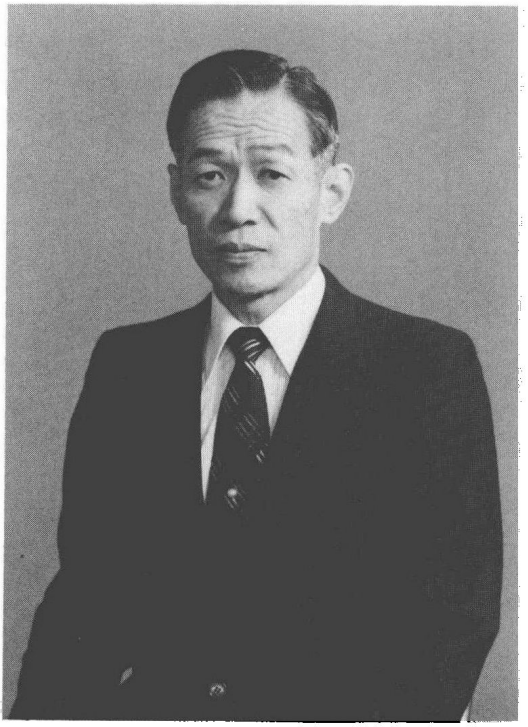

To Kozo Shinoda, in honor of his 65th birthday.

Preface

Amphiphilic association structures have developed into one of the most important branches of colloid chemistry during the last 20 years. There are a large number of very active groups on all continents with experimental and theoretical investigations rapidly entering new realms within this field.

Such was not the case in the 1960s. The active research groups were few and the amount of literature was limited. The active groups were easy to identify and characterize for a young scientist entering the field. One colloid scientist, especially, stood out, for several reasons. Professor Kozo Shinoda from Japan had published two books and his research was salient, because it was both highly original and had a strong foundation in thermodynamics.

These two factors have continued to characterize Kozo's pioneering contributions. They have to a high degree emanated from industrial needs to clarify and systematize phenomena that at first appear irregular or even confusing. An example is the HLB temperature, a subject that has had a tremendous influence on applied emulsion technology, making the "anomalous" behavior of polyethylene glycol alkyl ethers rational and predictable. Other phenomena—tertiary oil recovery, solubility of surfactants in hard water, antistatic agents, fluorinated surfactants, and others—have been treated in the same manner.

However, through this long array of "applied" subjects a well-defined fundamental solution concept is always noticeable. Contrary to an established convention, these solutions with amphiphilic association structures are not the exception; they are ubiquitous. In fact, they are the general class of solutions. Ideal and regular solutions are, instead, special cases. This insight has defined Professor Shinoda's place in science. He is one part of a foundation triumvirate: Hildebrand, Flory, Shinoda—regular solutions, polymer solutions, organized solutions.

Finally, the theme of a fundamental concept in applied projects leads to a sentence from another great scientist—a sentence that could serve as a motto for Kozo's life in science. Pasteur wrote: "Science appliquée n'existe pas; seulement l'application de la science."

This outstanding volume was written in honor of the 65th birthday of Professor Kozo Shinoda, Yokohama National University, Yokohama, Japan, who was an unquestioned pioneer of organized solutions—bringing together topics for the first time that were previously scattered throughout the literature *and* treating solutions with amphiphilic association structures and phenomena such as HLB temperature, tertiary oil recovery, and solubility of surfactants in hard water.

We are happy and grateful that so many outstanding scientists have joined us in honoring our friend Kozo; the width and the excellence in this book are the best illustration of what pioneering contributions can mean for the development of a branch of science.

Stig E. Friberg
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