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Multiple Emulsions

- Preparation and Properties -

2nd Edition 2022 (in German), DIN A5, Hardcover, 648 pages

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Abstract

In this book you will find everything important about the production of double emulsions and multiple emulsions. A double emulsion is simply an emulsion of an emulsion; multiple emulsions contain additional dispersed phases. The book explains how to achieve a high level of long-term emulsion stability and which particular material influences have to be taken into account to achieve this level of stability. The book also explains how to achieve efficient encapsulation and release properties. Theoretical concepts are supported by examples of specific practical applications. The book addresses issues of food product development (double emulsion as a sweetener filling compound or a component in milk desserts) and applications involving encapsulation or active ingredient dispensing systems in pharmacy and medicine. Expanding upon the first edition, the book contains explanations on the formation of double and multiple emulsions using microfluidic technology (microchannels, micro-nozzles). There is much current research activity on double emulsions as intermediates in the production of tailor-made microcapsules or microparticles involving adjustable substance release or substance binding. The reader will not only receive suggestions for novel systems for encapsulation and targeted substance release in food, pharmaceutical and cosmetic products, but also extensive literature references and relevant background sources. By presenting both the material and technical possibilities of multiple emulsions, this book is the ideal companion for all those who want to produce and exploit such multiphase liquid systems.

From the content:

- Double and multiple emulsions – formation, properties, use, composition and production
- Processes and microfluidic techniques for low-energy formation of multiple and double emulsions
- Types of emulsifiers for the stabilization of double emulsions and Pickering stabilization
- Influencing the properties of double emulsions
- Double emulsions for the pharmaceutical sector