

for rapid testing are presented. The next section outlines the types of validation and certification that can be used for food microbiological testing, and needs for them. Two types of methods of validation are; in-house method validation, external-third party validation and both of these are explained. Preparing and analysing samples, and how improvements can be made when sampling have been discussed, specifically based on mycotoxins, pesticides and genetically modified food. Feed and food legislation in EU sets certain standards that must be met when carrying out rapid methods. The quality and safety of the food supply must be maintained. Pathogens can be found in food and water, there are advanced biosensors, which detect and measure the pathogens, and these are discussed. Also the book details on detection of bacteria, methods where black colloidal carbon particles generate a signal when detecting the presence of certain organisms. *Listeria monocytogenes* is discussed for which is explained rapid nucleic acid detection method for certain bacteria. Noroviruses, which cause non-bacterial gastroenteritis in adults are found in food and water, their isolation and quantification is explained. For safe agriculture, horticulture and agro food processing quality control and monitoring is essential, to do so novel molecular and biochemical techniques are used and in this book are explained for plant pathogens and plant-related human pathogens. Also discussed are the rapid detection methods for GMO's where developments and harmonisation in the EU and protein-based GMO detection methods are described. Allergens are found in food, the immune system mistakes food for a harmful foreign substance and leads to an allergic reaction. Methods by which allergens can be detected are mentioned and described, ELISA, PCR and multi allergen-screening assay. Feeding animals with proteins from same species was banned by Animal By-Product, in 2002. Immunochemical and PCR assays are discussed as possible rapid methods for species identifications. The techniques were tested and the results are presented. The policy on characterisation of antibodies used in immunochemical methods of analysis for mycotoxins and phycotoxins is outlined, explaining the limitations for the methods and are discussed for studies carried out for AOAC INTERNATIONAL. This section is followed by discussion on rapid detection method for marine toxins. The book presents a personal view on the rapid detection of bacterial food-poisoning toxins and discusses illnesses caused by food-borne bacteria. Also discussed are the uses on enzyme sensor array for the determination three biogenic amines, histamine, tyramine and putrescine. Followed by this is the use and need for rapid assays to detect the presence of veterinary drug residues. A very important part of consumer safety is testing raw materials and the end product, these tests must be fast and cost-efficient and discussed are rapid immunoassays to detect pesticides. Dioxins in food and feed must be identified, rapid methods developed for their identification are described. Automated multi-channel surface plasmon resonance (SPR) biosensors have been developed for rapid analysis, these are discussed for detection of

sulfonamide assays. Wines can be contaminated by chlorophenols and chloroanisoles, immunodiagnosics techniques are explained and can be used to detect these contaminants and reduce contamination of wines by them. EU research into future developments for at- and on-line sensors in food production, as quality control is vital in the food industry, food sensor types, sensor markets and the conclusions from the EU food research are all presented. Detecting biological and chemical contaminants can be done by computerised systems, which are now a part of laboratory processes. Discussed is the management of data electronically; legislation—the standards that must be met by use of these computerised systems and method validation and automated system validation. Finally the book concludes with Nanotechnology in food analysis and it uses in the future. Nanotechnology is based on nano-science and aims to develop new products and processes to nanoscale dimensions. In food industry nanotechnology already plays a role in manufacturing and testing of products.

This book uses graphs, tables and illustrations to support the detailed information presented in the text, explains some of the rapid methods that can be carried out and details materials, methods and presents results and would be very useful for persons working in food industries, concentrating on rapid analysis on food and feed.

Rajdeep K. Sandhu*

John F. Kennedy

Chembiotech Laboratories,

Institute of Research & Development,

University of Birmingham Research Park,

Vincent Drive, Birmingham B15 2Q6, UK

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* Corresponding author

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Laurier L. Schramm, Emulsions, Foams, and Suspensions; Fundamentals and Applications, Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim, Germany, 2005 (xv + 448pp., €149, ISBN 3-527-30743-5)

Although at first thought one might separate into different categories emulsions, foams, and suspensions they are in fact all related through colloidal dispersions. A colloidal dispersion consists of a system, where finely divided droplets, particles, bubbles are distributed in another phase without dissolution. *Emulsions, Foams, and Suspensions; Fundamentals and Applications* concentrates on the three most common types of colloidal dispersions; emulsions, foams, and suspensions, which occur in many fields such as foods, geology, medicine, petroleum products and others which are discussed in the second half of this book.

The first seven chapters of *Emulsions, Foams, and Suspensions; Fundamentals and Applications* provide an introduction to the basic principles, where the first chapter discusses suspension formation and stability, and the second chapter details about dispersion and dispersed species characterization providing information on microscopy, radiation scattering, conductivity, dispersed phase identification, sedimentation and creaming. Chapter three and four discuss interfacial energetics and electrokinetics. Chapter five focuses on colloid stability discussing electrostatic, dispersion and repulsive forces, Derjaguin and Landau and Verwey and Overbeek theory, Schulze-Hardy rule, peptization, kinetics, flocculation and filtration. Chapter six details colloid rheology looking at non-newtonian flow properties, pseudoplasticity, dilatancy, thixotropy, viscoelasticity, dispersion and surface rheology, Einstein's equation. Chapter seven concentrates on preparation, inhibition and destruction of dispersions. Chapter eight introduces the applications of emulsions, foams and suspensions in practical and the industrial area. The next five chapters discuss the applications of emulsions, foams and suspensions in the environment, mining and mineral processing applications, petroleum industry applications, manufacturing and materials science applications and food product and agricultural applications. Chapter fourteen discusses the applications of emulsions, foam and suspensions in biological and medical areas. The human body contains large amounts of emulsions, foams and suspensions. Emulsions are found in the blood and vesicles, foams are found in the gastrointestinal and

spermicidal foams and suspensions are contained in polymer encapsulated drugs and diagnostic suspensions. The next chapter discusses the application of emulsions, foams and suspensions in personal care products such as cosmetic skin care products, detergents, shampoos and conditioners. Then chapter sixteen discusses smart colloids, nanodispersions and combating terror agents. The final chapter titled 'Glossary of Emulsion, Foam and Suspension Terminology' provides summary of the terms used in the book so that they can be understood.

Graphs, tables, and illustrations have been used to help understand the text. This book provides a detailed understanding of emulsions, foams and suspensions and would be useful to persons studying colloidal dispersions.

John F. Kennedy*
Rajdeep K. Sandhu
Chembiotech Laboratories,
Institute of Research & Development,
University of Birmingham Research Park,
Vincent Drive, Birmingham B15 2Q7, UK

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* Corresponding author
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