

Book reviews

Waste Treatment in the Food Processing Industry, Lawrence K. Wang, Yung-Tse Hung, Howard H. Lo, Constantine Yapijakis (Eds.). CRC/Taylor & Francis Group, Boca Raton, FL (2006). 342 pp., US\$ 89.95, ISBN: 08493072364

Food waste has long been one of my interests as I served as President of the League for International Food Education whose headquarters were in Washington, DC. As a result of that service, I was privileged to go on a US Agency for International Development-sponsored trip to an International Chemical Engineering Conference in Rio de Janeiro, Brazil where I presented and subsequently published in *Chemical Engineering Progress* a paper entitled “Resource Recovery from Food Waste”.

While the book does not focus on resource recovery, I did find a short (three-page) discussion on the recycling of garbage. The products of this process were compost and biogas. There also was a single table with data on recycling of waste from beer production.

In the preface, the editors state: “Important waste treatment topics covered in this book include: dairies, seafood processing plants, olive oil manufacturing factories, potato processing installations, soft drink production plants, bakeries and other food processing facilities. Special efforts were made to invite experts to contribute chapters in their own expertise”. These authors have contributed separate chapters on the foregoing mentioned topics. All authors, save one, were from outside North America. Consequently, numerous references are to non-US publications which open up a new source of data on food wastes not usually encountered in North America, e.g., palm oil, olive oil, etc.

Each chapter appears to have its own strengths, but I was particularly impressed by discussions of “Olive Oil Waste Treatment” in chapter 5 and “Potato Wastewater Treatment” in chapter 6. Both chapters were well written, but what impressed most were the mathematically worked design examples as well as “Case Studies”.

Chapter 2 addresses seafood wastes and contains no such worked design examples, but the authors do an excellent job discussing various pieces of wastewater treatment equipment such as inclined screens, clarifiers, inclined plate clarifiers, dissolved air flotation systems, activated sludge wastewater systems, trickling filters, rotating biological contactors, Imhoff tanks and electrocoagulation. Costs of wastewater treatment plant operations also are given.

The last chapter is on a general topic and is simply entitled “Food Waste Treatment”. In this chapter, the authors discuss the treatment of a variety of wastes, which in the main, were from Japanese food production processes. New topics found in this chapter include composting, biogas production, incineration with energy recovery, and hazardous wastes from food processing (the US law, EPCRA, which is the Emergency Planning and Community Right-to-Know Act is briefly touched upon with regard to chemicals used in food processing). Waste management in the fermentation industries is very briefly discussed. The book ends with tables on “Sludge Recycling Centers Using Anaerobic Treatment in Japan” and “Energy Efficiency of Biogas Production System and Incineration with Power Generation”. Both of these topics are forward-looking and merit more space.

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Gasification Technologies: A Primer for Engineers and Scientists, J. Rezaian, N.P. Cheremisinoff. CRC/Taylor & Francis Group, Boca Raton, FL (2005). 255 pp., US\$ 139.95, ISBN: 0-8247-2247-7

In this book, the authors discuss (in my opinion extremely thoroughly) gasification techniques that can be carried out in one of many different reactor configurations such as: fixed bed; fluid bed; bubbling, circulating, entrained twin bed; moving bed; rotary kiln; and cyclonic. Each technology is discussed to provide the reader with a working knowledge of the process as well as a view of each system’s advantages and disadvantages. Each reactor configuration is illustrated by a simple line drawing.