### **BOOK REVIEW**

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# Review of 'Solid Biofuels for Energy–A Lower Greenhouse Gas Alternative' by Panagiotis Grammelis

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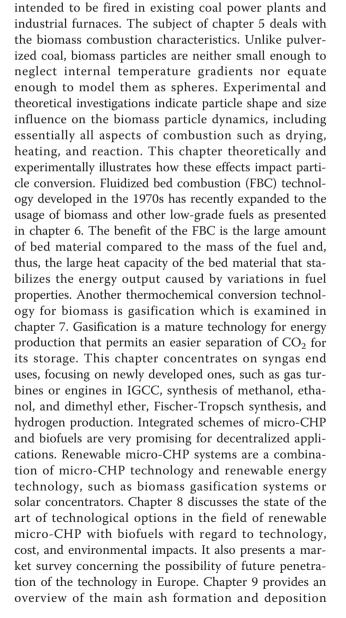
### **Book details**

Solid Biofuels for Energy London, Dordrecht, Heidelberg, New York: Springer-VerlagGrammelis, Panagiotis; 2011:256. ISBN 978-1-84996-392-3

Fossil fuels, widely used for electricity generation and heating, emit greenhouse gases which should be minimized according to the most recent environmental legislation. The utilization of solid fuels of biogenic origin could contribute, to some extent, towards the aim of reducing greenhouse gas emissions. Within this book, special attention has been given to biomass co-firing with coal as it has the highest potential for commercial application in large-scale units, whereas according to the author's interpretation, combustion and gasification are more promising for units of small to medium scale. In chapter 1, key questions arising from biomass availability and supply are discussed. A detailed analysis of solid agricultural biomass feedstock in EU27 summarizes the relevant data, which influence the availability and future supply of this feedstock for energy and fuel production. The European Standards for the specifications of solid biofuels are presented in chapter 2. Chapter 3 provides an overview of all technical issues for biomass-coal cofiring in boilers designed exclusively for coal (mainly pulverized coal) combustion. Biomass-coal co-combustion represents a low-risk, low-cost, sustainable, renewable energy option that promises an effective near-term reduction in CO<sub>2</sub>, SO<sub>X</sub>, and often NO<sub>X</sub> emissions, as well as several societal benefits. A step ahead on co-firing development is covered in chapter 4 in which the co-utilization of solid recovered fuels (SRF) with coal is extensively reviewed. SRF are solid fuels prepared from high-calorific fractions of non-hazardous waste materials

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mechanisms for various relevant biomass fuels, including blends with selected coals, in pulverized-fuel boilers. The book ends with an overview of the different forms of ash usage that exist or are being developed for biomass ashes, as presented in chapter 10.

Key aspects for the energy exploitation of solid biofuels are considered in this book, providing valuable information for the reader who is familiar with the biomass sector. Even for an amateur, basic knowledge is provided since all potential methods for solid biomass exploitation are described. This book presents the current status of the engineering disciplines in this specific area, providing an extensive overview of the energy exploitation options of solid biomass. In this sense, all thematic priorities related to the solid bioenergy potential and standardization, the energy technologies (commercialized and emerging technologies), and the quality of solid residues are presented. Consequently, the book is addressed to all those who want to get an overview of new approaches in solid biomass usage for heat, power, and fuel production. The book Solid Biofuel for Energy-A Lower Greenhouse Gas Alternative is dedicated to advanced students, researchers, and experts from industrial and governmental organizations who are interested in solid biomass usage for energy supply as an alternative to fossil fuels. The book provides a good overview to readers interested in this subject matter.

#### **Competing interests**

The author declares that they have no competing interests.

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