Author(en) des Beitrags: 
Khan, A. A.; de Jong, W.; Jansens, P. J.; Spliethoff, H.

Titel des Beitrags: 
Biomass combustion in fluidized bed boilers: Potential problems and remedies

Abstract: 
Due to increasing environmental concerns especially related with the use of fossil fuels, new solutions to limit the greenhouse gas effect are continuously sought. Among the available alternative energy sources, including hydro, solar, wind etc. to mitigate greenhouse emissions, biomass is the only carbon-based sustainable option. On one hand, the versatile nature of biomass enables it to be utilized in all parts of the world, and on the other, this diversity makes biomass a complex and difficult fuel. Especially the high percentages of alkali (potassium) and chlorine, together with high ash content, in some brands of biomass prove to be a major source of concern. However, mechanisms leading to corrosion and high dust emissions problems have been identified and a range of possible solutions is already available. Among the technologies that can be used for biomass combustion, fluidized beds are emerging as the best due to their flexibility and high efficiency. Although agglomeration problems associated with fluidized bed combustors for certain herbaceous biofuels is still a major issue, however, but successful and applicable/implementable solutions have been reported. This review article presents the major issues concerned with biomass combustion with special reference to the small scale fluidized bed systems (small to pilot scale). Problems have been identified, mechanisms explained and solutions have been indicated. in conclusion, a range of concerns including environmental, economical
and technical associated with biomass exist, but none of these issues represent an insurmountable obstacle for this sustainable energy source. (C) 2008 Elsevier B.V. All rights reserved.