Title of the Contribution:
GT2005-68440 Measurements Inside a Bluff-Body Stabilized Gas Turbine
Combustor for Application of Pressurized Biomass Derived Low Calorific Value Fuel Gas and Comparison of the Results

Abstract:
A medium size gas turbine combustor of 1.5 MW of Delft University (TUD) has been tested to combust low calorific value (LCV) fuel gas. The LCV gas was obtained from pressurized gasification of wood pellets class A, miscanthus giganteus and brown coal and was cleaned from its particulates by high temperature ceramic filters of beta-cordierite. Stable combustion of (biomass derived) low calorific value fuel gas with heating values (LHV) between 1.64 and 4.48 MJ/m$^3$ (50 to 120 Btu/scf) was accomplished due to high fuel gas temperatures ranging from 845 to 1099 K. Main species (O$_2$, CO$_2$,) and minor species (Ar, CH$_4$, H$_2$, CO, NO) were measured in the exhaust and by a traversing probe after the primary zone of the combustor. The water and nitrogen contents in the exhaust were calculated from the element balances. The results are compared with a previously tested combustor of ALSTOM Power of the RQL type.

Congress / Book Title:
Proceedings of the ASME Turbo Expo 2005

Band / Teilband:
1

Verlagsort:
Berlin

Jahr:
2005

Seiten:
407--410

Occurences:
· Einrichtungen > Fakultäten > Fakultät für Maschinenwesen > Institut für Energietechnik > Lehrstuhl für