

Title (en)
Axial stage for a burner with a stabilised jet

Title (de)
Axiale Stufe für einen strahlstabilisierten Brenner

Title (fr)
Étage axial pour un brûleur à rayonnement stabilisé

Publication
EP 2442030 A1 20120418 (DE)

Application
EP 10187400 A 20101013

Priority
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Abstract (en)
The combustion system (1) comprises a first axial stage (20), a combustion chamber with a combustion chamber cross-sectional area, jet nozzles arranged in the combustion chamber with a total jet nozzle outlet cross sectional area, and a second axial stage (21) having air nozzles (22) of the first axial stage, where fuel nozzles (23) are arranged in the second axial stage. The second axial stage is downstream of the flow direction of a combustion gas, and includes burner air (20-30%). The air nozzles and the fuel nozzles are inclined in the flow direction of a combustion gas. The combustion system (1) comprises a first axial stage (20), a combustion chamber with a combustion chamber cross-sectional area, jet nozzles arranged in the combustion chamber with a total jet nozzle outlet cross sectional area, and a second axial stage (21) having air nozzles (22) of the first axial stage, where fuel nozzles (23) are arranged in the second axial stage. The second axial stage is downstream of the flow direction of a combustion gas, and includes burner air (20-30%). The air nozzles and the fuel nozzles are inclined in the flow direction of a combustion gas, where fuel lances are arranged at the upstream end of the jet nozzles. The jet nozzles are: designed such that a ratio of the combustion chamber cross-sectional area to the total jet nozzle outlet cross sectional area is 10; and annularly arranged around a central axis of the combustor. A ratio of the distance between the jet nozzle outlet of the first axial stage and the air nozzles of the second axial stage and the diameter of the jet nozzles is 8-15.

Abstract (de)
Die Erfindung betrifft ein Verbrennungssystem (1) mit einer ersten axialen Stufe (20), umfassend eine Brennkammer (3) mit einer Brennkammerquerschnittsfläche und eine Anzahl von in der Brennkammer angeordneten Strahldüsen (8, 8', 8'') mit einer Strahldüsengesamtaustrittsquerschnittsfläche, wobei eine zweite axiale Stufe (21) mit Luftdüsen (22) der ersten axialen Stufe (20) in Strömungsrichtung eines Verbrennungsgases nachgeschaltet ist und die Strahldüsen (8, 8', 8'') so ausgebildet sind, dass ein Verhältnis von Brennkammerquerschnittsfläche zu Strahldüsengesamtaustrittsquerschnittsfläche mindestens 6 beträgt. Die Erfindung betrifft ferner eine Gasturbine.

IPC 8 full level
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CPC (source: EP)
F23R 3/06 (2013.01); **F23R 3/346** (2013.01); **F23R 2900/03282** (2013.01)

Citation (search report)
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