

Title (en)
RECIRCULATING FLUID BED COMBUSTOR - METHOD AND APPARATUS

Publication
EP 0176293 A3 19870422 (EN)

Application
EP 85306529 A 19850913

Priority
US 65430284 A 19840924

Abstract (en)
[origin: EP0176293A2] A fluidized bed combustor (10) for burning solid fuel or dirty liquid fuels comprised of a bubbling fluid bed (15) with heat exchanger tubes (13) in the bed, a hot recycle cyclone (21), a convective heat exchanger (26) and a particle filter (27). The bubbling fluid bed (B) is operated at low superficial velocities of 0.5 to 6 ft/second (0.15 to 1.8 m/s) and is composed of fine particulate 45 to 2000 microns in diameter with up to 40% less than 200 microns. Fines elutriated from the bed are isothermally recycled back to the bed resulting in high combustion efficiency and good sulphur oxide suppression from sorbents contained in the bed. The material recycled in one hour is equivalent to twice the weight of the bed. Ammonia (24) injected upstream of the recycle cyclone (21) suppresses nitrogen oxides with high efficiency because of the excellent mixing in the cyclone (21). The heat transfer coefficient on the tubes in the bed is increased at least 2 to 4 times because of the fine particulate nature of the bed. Fluidization occurs over a 10:1 range in superficial velocities.

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F23C 11/02; **F23J 7/00**

IPC 8 full level
F23C 10/18 (2006.01); **F22B 31/00** (2006.01); **F23C 10/00** (2006.01); **F23C 10/02** (2006.01); **F23C 10/10** (2006.01); **F23J 15/02** (2006.01)

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Citation (search report)
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• [A] DE 2642498 A1 19770414 - DORR OLIVER INC
• [AD] US 4111158 A 19780905 - REH LOTHAR, et al
• [AD] US 3900554 A 19750819 - LYON RICHARD K
• [A] CHEMIE-INGENIEUR-TECHNIK, vol. 56, no. 3, March 1984, pages 197-202, Verlag Chemie GmbH, Nürnberg, DE; L.REH: "Neue grosstechnische Anwendungen des Reaktionsprinzips der zirkulierenden Wirbelschicht"

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