Title (en)

KITCHEN EXHAUST SYSTEM WITH CATALYTIC CONVERTER

Title (de)

KUCHENABLUFTSYSTEM MIT KATALYTISCHEM KONVERTER

Title (fr)

SYSTEME AVEC CONVERTISSEUR CATALYTIQUE POUR L'EXTRACTION DES FUMEES DANS UNE CUISINE

Publication

EP 0881935 A1 19981209 (EN)

Application

EP 97930096 A 19970618

Priority

- US 9710550 W 19970618
- US 2006896 P 19960619

Abstract (en)

[origin: WO9748479A1] A kitchen exhaust system for a smoky cooking appliance includes a modular exhaust hood (11) with a catalytic converter (22). High catalyst temperatures are obtained with a minimum of auxiliary heat. The exhaust hood (11) is tapered for forming a converging channel leading to an inlet slot (19), located over the middle of the cooking area, through which the exhaust flow passes to the catalytic converter (22). The slot (19) is sized to match the flow through the inlet and an average natural-convection plume velocity from the cooking appliance. A portion of the treated effluent stream (27) is recirculated to form a capture jet (24) at the front of the hood (11) to create a local negative pressure that reduces potential for entrainment of fumes into the surrounding area without increasing exhaust volume. A control system provides for self-cleaning of the catalyst. Auxiliary burners (28) are employed to insure catalyst inlet temperatures are sufficient for ignition of the catalyst. Heat is added to promote the incineration and/or vaporization of aerosol particles. To do this, hot exhaust from the burner (28) is injected directly into the effluent stream (17). Acceleration of the main flow is promoted during a turbulent mixing regime, characterized by a fluctuating temperature field, upstream of a phase in which molecular diffusion dominates. The acceleration causes the particles to migrate, relative to the carrying flow, through the varying temperature field, causing incineration/vaporization with less heating of the cool carrying gas.

IPC 1-7

B01D 53/34; F01N 3/10; F24C 15/20

IPC 8 full level

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CPC (source: EP)

B01D 53/885 (2013.01); **F24C 15/2028** (2013.01); **F24C 15/205** (2013.01)

Cited by

CN108870492A; CN115364667A; US10082299B2; US10184669B2; US11242999B2; US10302307B2; US10471482B2

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