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[Continued on nextpage]

(54) Title: MULTI-STACK MCFC SYSTEM AND METHOD FOR SEPARATING CO₂ FROM COMBUSTION FLUE GAS CONTAINING NO_x AND SO_x

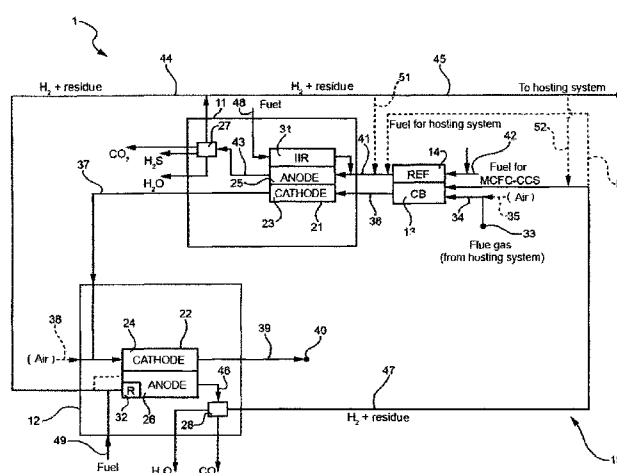


FIG. 1

(57) Abstract: A multi-stack MCFC system (1) for separating CO₂ from combustion flue gas containing NO_x and SO_x comprises: a first MCFC-CCS block (11) of MCFC stacks and at least a second MCFC-CCS block (12) of MCFC stacks, having respective separators (27, 28) acting on the anodic exhausts, at least one burner (13) and a connection system (15) that connects the blocks (11, 12) and the burner (13) so that: the cathodes (23, 24) of the stacks (21, 22) of the two blocks (11, 12) are connected in series; the flue gas to treat only enters into the cathodes (23) of the stacks (21) of the first block (11), with or without addition of air; in the second block (12), and in any following blocks, no flue gas enters that has not passed through the cathodes (23) of stacks (21) of the first block (11); the anodes (25, 26) of the stacks (21, 22) of each block (11, 12) are connected to respective separators (27, 28), that remove H₂O and separate a stream with CO₂ intended to be captured by a stream rich in H₂; the separators (27, 28) and the lines that manipulate the anodic exhausts are organized so that H₂S and N₂ are ejected from the system.



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