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(71) Applicant (for all designated States except US): **ITEA S.P.A.** [IT/IT]; Via Pollastri, 6, I-40138 Bologna (IT).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MALAVASI, Massimo** [IT/IT]; Via Santa Marta, 13, I-20123 Milano (IT). **ROSSETTI, Edoardo** [IT/IT]; Via S. Luca, 9/3, I-40135 Bologna (IT).

(74) Agents: **PROVVISIONATO, Paolo** et al.; c/o Provvisionato & Co S.r.l., Piazza di Porta Mascarella, 7, I-40126 Bologna (IT).

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(54) Title: HIGH-EFFICIENCY COMBUSTORS WITH REDUCED ENVIRONMENTAL IMPACT AND PROCESSES FOR POWER GENERATION DERIVABLE THEREFROM

(57) Abstract: A process for combusting solid, liquid or gaseous fuels in a high temperature refractory-lined reactor, with the aim of generating electric power, comprises mixing at least one fuel with steam. The refractory material of the reactor and the opaque gases of the reaction environment bring about high power infrared radiation which substantially instantaneously preheats the reactants on input, including said reactants being intrinsically transparent to infrared radiation.(N₂/O₂) but rendered opaque and thus absorbers of energy from infrared radiation thanks to dilution with steam. A high efficiency combustor is provided for carrying out the above-stated process.



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