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(54) Title: ELECTRICALLY HEATED REACTOR, A FURNACE COMPRISING SAID REACTOR AND A METHOD FOR GAS
CONVERSIONS USING SAID REACTOR

(57) Abstract: The present invention relates to an electrically heated reactor having an outer surface area, an inlet and an outlet, wherein
(a) the reactor is a tube surrounded by electrical heating means at a certain distance; (b) the electrical heating means comprises radiative
sheeting placed coaxially with regard to the reactor tube, the surface area of the sheeting facing the outer surface area of the reactor
tube defining an inner surface area of the electrical heating means; (c) the inner surface area of the heating means covers at least 60%
of the reactor tube outer surface area; and (d) the distance between the reactor tube and the heating means is selected such that the
ratio between the inner surface area of the electrical heating means to the reactor tube outer surface area is in the range of 0.7 to 3.0.
Electrically heated processes demand managing a heat-flux and temperature profile. In many applications the heat-flux is larger where
the process flow enters the reactor whilst having a lower temperature. Towards the exit of the reactor tube the heat-flux is lower whilst
the process flow having higher temperature. The present invention can accommodate this requirement. The reactor is useful in many
industrial scale high temperature gas conversion and heating technologies.

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