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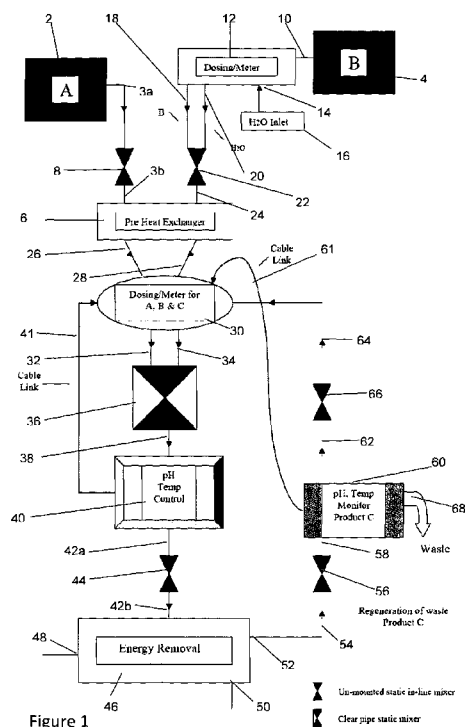


Figure 1

(57) Abstract: The invention provides an apparatus for heating a liquid, which apparatus comprises: a mixing chamber; dispensing means for dispensing metered amounts of first and second chemical reactants into the mixing chamber to form a reaction mixture so that the chemical reactants undergo an exothermic chemical reaction to generate heat and one or more reaction products; an electronic control device linked to the dispensing means for controlling the dispensing of the metered amounts of first and second chemical reactants; one or more pumps for moving the chemical reactants and reaction mixture around the apparatus; a heat exchanger having an inlet and an outlet for the reaction mixture and an inlet and an outlet for the said liquid, so that when said liquid passes through the heat exchanger it is heated by heat transfer from the reaction mixture; one or more monitoring stations for monitoring one or more physical or chemical parameters of the reaction mixture; the monitoring stations being arranged to communicate with the electronic control device; and a waste outlet for removing spent reaction mixture from the apparatus; wherein the mixing chamber, heat exchanger and the one or more monitoring stations are connected so as to form a loop; and wherein the electronic control device is programmed to cause the reaction mixture to be circulated around the loop at least twice, and optionally to cause the dispensing means to dispense further metered amounts of first and/or second chemical reactants into the mixing chamber; and/or to cause a proportion of the reaction mixture to be ejected through the waste outlet, in order to control the temperature of the reaction mixture passing through the heat exchanger.

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 F24J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2 446 820 A (COLLINS MARK [GB]) 27 August 2008 (2008-08-27) cited in the application page 2, lines 16-22; figure 1 -----	1
A	WO 86/01880 A1 (GADD OLOF [SE]; HOLM AXEL [SE]; SJOELO LENNART [SE]; ELMQVIST ORVAR [S]) 27 March 1986 (1986-03-27) cited in the application figure 1 -----	1,29



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Information on patent family members

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