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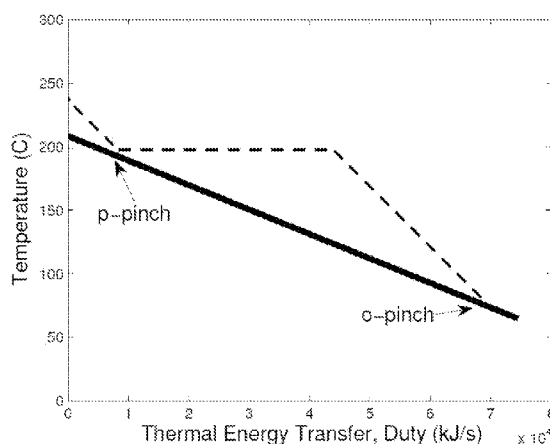
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(54) Title: DOUBLE PINCH CRITERION FOR OPTIMIZATION OF REGENERATIVE RANKINE CYCLES

FIG. 3

(57) Abstract: Systems and methods are disclosed herein that generally involve a double pinch criterion for optimization of regenerative Rankine cycles. In some embodiments, operating variables such as bleed extraction pressure and bleed flow rate are selected such that a double pinch is obtained in a feedwater heater, thereby improving the efficiency of the Rankine cycle. In particular, a first pinch point is obtained at the onset of condensation of the bleed and a second pinch point is obtained at the exit of the bleed from the feedwater heater. The minimal approach temperature at the first pinch point can be approximately equal to the minimal approach temperature at the second pinch point. Systems that employ regenerative Rankine cycles, methods of operating such systems, and methods of optimizing the operation of such systems are disclosed herein in connection with the double pinch criterion.



A. CLASSIFICATION OF SUBJECT MATTER***F01K 25/08(2006.01)i, F01K 23/10(2006.01)i, F01K 7/16(2006.01)i***

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

F01K 25/08; F01K 7/16; F02C 7/00; F02G 3/00; F02C 6/00; B60K 16/00

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: regenerative rankine cycle, feedwater heater, pinch

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 04841721A A (PATTON; JOHN T. et al.) 27 June 1989 See column 4, line 54 - column 7 line 21; figure 1.	1-44
A	US 2009-0125152 A1 (SKOWRONSKI MARK JOSEPH et al.) 14 May 2009 See paragraph 46; claim 1 and figure 1.	1-44
A	US 06035643A A (ROSENBLATT; JOEL H.) 14 March 2000 See column 3 line 65 - column 5 line 10; figure 1.	1-44
A	US 2006-0254251 A1 (KATSUSHIGE YAMADA) 16 November 2006 See figure 1.	1-44



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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