Title: COMPACT SULFUR RECOVERY PLANT AND PROCESS

Abstract: A compact sulfur recovery system is disclosed which comprises a primary structure including a catalytic partial oxidation reaction zone, first temperature-control zone, first Claus catalytic reaction zone, second temperature-control zone, first liquid sulfur outlet, and first effluent gas outlet. In some embodiments, a secondary structure follows the primary structure and comprises a second Claus catalytic reaction zone, third temperature-control zone, second liquid sulfur outlet and second effluent gas outlet. One or more components of the system employ heat transfer enhancement material in the temperature-control zones, and one or more components deter accumulation of liquid sulfur in the Claus catalytic reaction zones. A process for recovering elemental sulfur from hydrogen sulfide-containing gas streams comprises regulating the temperature of certain components to favor the partial oxidation and Claus reactions, respectively, and deters pooling of liquid sulfur on the Claus catalyst(s).
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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)
USPC 423/573 1

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

Electronic database consulted during the international search (name of database and, where practicable, search terms used)
Electronic Databases Search USPTO WEST (PGPUB, EPAB, JPAB, USPT), Google patent, Thomson dialog
Search Terms Used downward or down stream, effluent gas, temperature-control, catalytic, sulfur adj recover$, fluid or flow, oxidation

C DOCUMENTS CONSIDERED TO BE RELEVANT

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<tr>
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<tbody>
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<td>X</td>
<td>US 2005/01 8091 4 A1 (Keller et al) 18 August 2005 (18 08 2005) entire document especially abstract, figure 1-4, para [0026] [0029]-[0030], [0033], [0034], [0036], [0038], [0039], [0054], [0058], [0060], [0070]</td>
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<td>Y</td>
<td>US 6,800,269 B2 (Keller et al) 05 October 2004 (05 10 2004) col 15, in 05-20, col6, in 09-50</td>
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