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JP, KG, KP, KR, KZ, LT, MD, ML, MR, MX, MY, NE, NL, NO, NZ, OM, PL, RO, RU, SI, SK, SN, TD, TG, TH, TJ, TM, TN, TR, TT, US, UZ, ZA): **PRAD RESEARCH AND DEVELOPMENT LIMITED**; P.O. Box 71 Craigmuir Chambers, Road Town, Tortola, British Virgin Islands (VG).

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(54) Title: APPARATUS AND METHOD FOR PHASE EQUILIBRIUM WITH IN-SITU SENSING

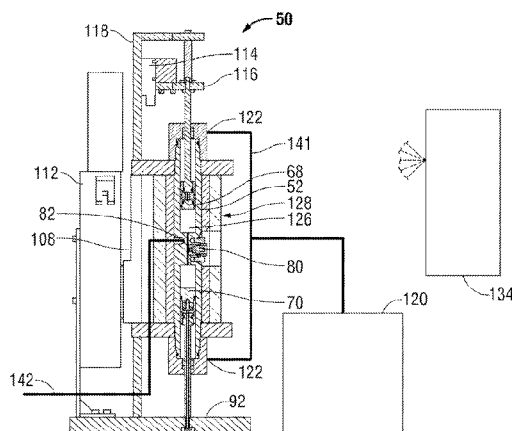


FIG. 2

(57) Abstract: A technique facilitates the monitoring of thermodynamic properties of reservoir fluids. The technique utilizes a modular sensor assembly designed to evaluate a sample of a hydrocarbon-containing fluid within a cell body. A variety of sensors may be selectively placed into communication with a sample chamber within the cell body to evaluate the sample at potentially high pressures and temperatures. The sensors may comprise a density-viscosity sensor located in-situ to efficiently measure both the density and viscosity of the sample as a function of pressure and temperature. Other sensors, such as an optic sensor, may also be positioned to measure parameters of the sample while the sample is retained in the sample chamber.





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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) G01N		
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 practicable, 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.
X	EP 0 364 217 A2 (PANAMETRICS [US]) 18 April 1990 (1990-04-18) page 4, line 9 - page 4, line 24; figures 1,2	1-21
X	----- EP 1 804 048 A1 (SCHLUMBERGER SERVICES PETROL [FR]; SCHLUMBERGER TECHNOLOGY BV [NL]; SC) 4 July 2007 (2007-07-04) paragraphs [0006] - [0007], [0019] - [0023]; claim 1 -----	1-21
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents :		
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	
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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	
"P" document published prior to the international filing date but later than the priority date claimed		
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Information on patent family members

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