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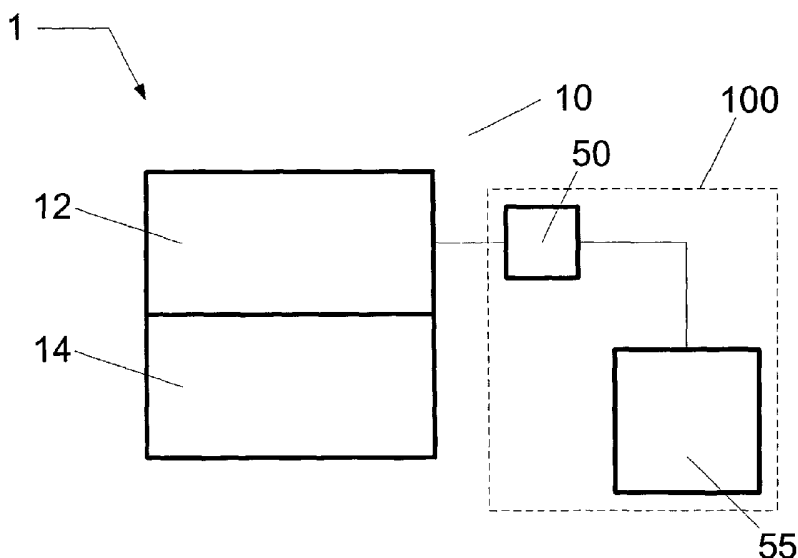
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(54) Title: METHOD AND SYSTEM OF DETERMINING CHAMBER SEASONING CONDITION BY OPTICAL EMISSION



(57) Abstract: A plasma processing system that comprises a process chamber, a plasma source, a light detection device and a controller. The controller is useful for determining a seasoning state of the plasma processing system. The present invention further provides a method of determining the seasoning state of a plasma processing system comprising the steps of forming a first plasma in the process chamber utilizing the plasma source; measuring a first signal related to light emitted from the first plasma using the light detection device and storing the first signal using the controller; forming a second plasma in the process chamber utilizing the plasma source; measuring a second signal related to light emitted from the second plasma using the light detection device and storing the second signal using the controller; and correlating a change between the first signal and the second signal with a seasoning state of the plasma processing system.

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# INTERNATIONAL SEARCH REPORT

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PCT/US03/15391

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : G01N 21/00; G01J 3/28  
 US CL : 356/72, 326

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)  
 U.S. : 356/72, 326, 30, 328, 416, 419

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
 NONE

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

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P ---	US 2003/0052083 A1 (KIM et al.) 20 March 2003 (20.03.2003), see entire document.	1-7,13-24,30-34,40
A,P		8-12,25-27,35-39,41-44

Further documents are listed in the continuation of Box C.  See patent family annex.

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"P" document published prior to the international filing date but later than the priority date claimed	

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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer <i>Shawn S. Hopper</i> JOSE DEES Telephone No. 571-272-1569
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**Continuation of B. FIELDS SEARCHED Item 3:**

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