US009409166B2

(12) **United States Patent**
Mauk et al.

(10) **Patent No.: US 9,409,166 B2**
(45) **Date of Patent: Aug. 9, 2016**

(54) **INTEGRATED PCR REACTOR FOR CELL LYSIS, NUCLEIC ACID ISOLATION AND PURIFICATION, AND NUCLEIC ACID AMPLICATION RELATED APPLICATIONS**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1010 days.

(21) Appl. No.: **12/331,508**

(22) Filed: **Dec. 10, 2008**

(65) **Prior Publication Data**

US 2009/0186357 A1 Jul. 23, 2009

Related U.S. Application Data

(60) Provisional application No. 61/012,667, filed on Dec. 10, 2007.

(51) **Int. Cl.**
B01L 3/00 (2006.01)
B01L 7/00 (2006.01)

(52) **U.S. Cl.**
CPC ***B01L 3/5027*** (2013.01); *B01J 2219/00529* (2013.01); *B01J 2219/00608* (2013.01); *B01J 2219/00641* (2013.01); *B01J 2219/00659* (2013.01); *B01J 2219/00722* (2013.01); *B01L 3/502707* (2013.01); *B01L 7/52* (2013.01); *B01L 2200/12* (2013.01); *B01L 2200/16* (2013.01); *B01L 2300/0681* (2013.01); *B01L 2300/0816* (2013.01); *B01L 2300/0867* (2013.01); *B01L 2400/0655* (2013.01); *B01L 2400/0677* (2013.01)

(58) **Field of Classification Search**
CPC B01L 3/5027; B01J 2219/00722; C12Q 1/6883
USPC 435/91.2
See application file for complete search history.

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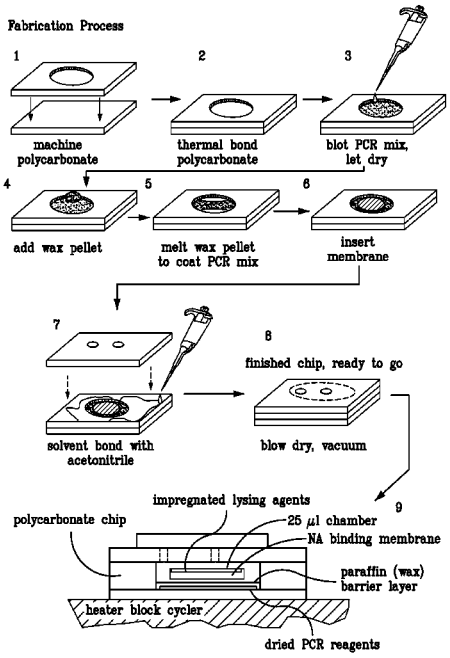
(57) **ABSTRACT**

Disclosed are integrated devices capable of performing a polymerase chain reaction within a single vessel. Also disclosed are related methods of sample analysis.

30 Claims, 27 Drawing Sheets