



US009068883B2

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

(10) **Patent No.:** **US 9,068,883 B2**
(45) **Date of Patent:** **Jun. 30, 2015**

(54) **COMPACT, LOW COST RAMAN MONITOR FOR SINGLE SUBSTANCES**

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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 0 days.

(21) Appl. No.: **14/149,321**

(22) Filed: **Jan. 7, 2014**

(65) **Prior Publication Data**

US 2014/0125977 A1 May 8, 2014

Related U.S. Application Data

(63) Continuation of application No. 14/013,359, filed on Aug. 29, 2013, now Pat. No. 8,654,326, which is a continuation of application No. 13/547,469, filed on Jul. 12, 2012, now Pat. No. 8,553,221, which is a continuation-in-part of application No. 13/361,072, filed on Jan. 30, 2012, now Pat. No. 8,339,598, which is a continuation of application No. 13/165,333, filed on Jun. 21, 2011, now Pat. No. 8,125,635, which is a continuation of application No. 11/923,571, filed on Oct. 24, 2007, now Pat. No. 7,982,863.

(60) Provisional application No. 60/854,339, filed on Oct. 24, 2006.

(51) **Int. Cl.**

G01J 3/44 (2006.01)
G01J 3/10 (2006.01)
G01N 21/65 (2006.01)
G01J 3/02 (2006.01)
G01J 3/18 (2006.01)

G02B 6/293 (2006.01)
G01N 21/17 (2006.01)

(52) **U.S. Cl.**

CPC **G01J 3/10** (2013.01); **G01J 3/4412** (2013.01); **G01N 21/65** (2013.01); **G01N 21/658** (2013.01); **G01N 2021/1793** (2013.01); **G01N 2201/0221** (2013.01); **G01N 2201/129** (2013.01); **G01N 2201/1296** (2013.01); **G01J 3/0256** (2013.01); **G01J 3/1895** (2013.01); **G01J 3/44** (2013.01); **G02B 6/29319** (2013.01)

(58) **Field of Classification Search**

CPC G01J 9/00; G01N 2021/1793; G01N 2021/6417
USPC 356/603, 301-302, 631; 700/117-119, 700/97, 103
See application file for complete search history.

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(57) **ABSTRACT**

Apparatus for performing Raman spectroscopy may include a first laser source having a first emission wavelength and a second laser source having a second emission wavelength. A separation between the first and second emission wavelengths may correspond to a width of a Raman band of a substance of interest. A switch may provide switching between the first and second laser sources. An ensemble of individually addressable laser emitters may be provided. A Bragg grating element may receive laser light from the ensemble. An optical system may direct light from the Bragg grating element into an optical fiber. A combined beam through the optical fiber may contain light from each of the emitters.

20 Claims, 9 Drawing Sheets

