

Form PTO-1595 (Rev. 07/05)  
OMB No. 0651-0027 (exp. 6/30/2008)

U.S. DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office

**MR**

**RECORDATION FORM COVER SHEET  
PATENTS ONLY**

**S-135,840**

To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.

**1. Name of conveying party(ies)**  
AIR PRODUCTS AND CHEMICALS, INC.  
7201 HAMILTON BOULEVARD  
ALLENTOWN, PA 18195  
Additional name(s) of conveying party(ies) attached?  Yes  No

**2. Name and address of receiving party(ies)**  
Name: United States Department of Energy  
Internal Address: \_\_\_\_\_  
Street Address: 1000 Independence Ave., S.W  
City: Washington  
State: D.C.  
Country: USA Zip: 20585  
Additional name(s) & address(es) attached?  Yes  No

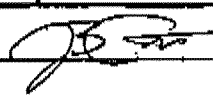
**3. Nature of conveyance/Execution Date(s):**  
Execution Date(s) 08/19/2014  
 Assignment  Merger  
 Security Agreement  Change of Name  
 Joint Research Agreement  
 Government Interest Assignment  
 Executive Order 9424, Confirmatory License  
 Other \_\_\_\_\_

**4. Application or patent number(s):**  This document is being filed together with a new application.  
A. Patent Application No.(s)  
14/197,546  
B. Patent No.(s)  
Additional numbers attached?  Yes  No

**5. Name and address to whom correspondence concerning document should be mailed:**  
Name: James B. Potts  
Internal Address: U. S. Dept. of Energy, IPLD  
Street Address: 9800 S. Cass Ave  
City: Argonne  
State: IL Zip: 60439  
Phone Number: 630-252-2166  
Fax Number: 630-252-2779  
Email Address: Confirmatory.License@ch.doe.gov

**6. Total number of applications and patents involved:** 1  
**7. Total fee (37 CFR 1.21(h) & 3.41) \$** \_\_\_\_\_  
 Authorized to be charged by credit card  
 Authorized to be charged to deposit account  
 Enclosed  
 None required (government interest not affecting title)

**8. Payment Information**  
a. Credit Card Last 4 Numbers \_\_\_\_\_  
Expiration Date \_\_\_\_\_  
b. Deposit Account Number \_\_\_\_\_  
Authorized User Name \_\_\_\_\_

**9. Signature:** \_\_\_\_\_  
Signature  Date 11/19/14

James B. Potts #58,316  
Name of Person Signing  
Total number of pages including cover sheet, attachments, and documents: **2**

Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140, or mailed to:  
Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1460, Alexandria, V.A. 22313-1460

**PATENT**



**Department of Energy**  
**Office of Science • Chicago Office • Intellectual Property Law Division**  
 9800 South Cass Avenue Argonne, Illinois 60439  
 (630) 252-2171 Voice • (630) 252-2779 Fax  
 Chicago-IP@ch.doe.gov  
 www.ch.doe.gov/offices/OCC/

### CONFIRMATORY LICENSE

**Title of Invention:** Ion Transport Membrane Reactor Systems and Methods for Producing Synthesis Gas  
**Inventor(s):** John M. Repasky  
**Patent Application Serial No:** 14/197546  
**Patent Number:**  
**Name of Contractor (i.e. Contractor, Subcontractor, Grant, or Cooperative Agreement, as applicable):**  
**Name of Contractor:** Air Products and Chemicals, Inc.  
**DOE Contract No. (i.e. Contract, Subcontract, Grant, or Cooperative Agreement, as applicable):**  
 DE-FC26-97FT96052  
**DOE Case No.:** S-135,840  
**Contractor Docket No.:** 07535  
**Filing Date:** 03/05/2014  
**Issue Date:**

The Contractor has reported the above-identified invention as a Subject Invention to DOE and has elected to retain title thereto.

Accordingly, this document is confirmatory of the nonexclusive, nontransferable, irrevocable, paid-up, worldwide license in this subject invention, patent application and any resulting patent, including any continuation, divisional, reissue, or supplemental application thereof, to practice or to have practiced for or on behalf of the United States throughout the world; and of all other rights acquired by the Government by the patent rights clause in the above-identified contract.

It is understood and agreed that this license does not preclude the Government from asserting rights under the provisions of said contract or of any other agreement between the Government and the Contractor, or from asserting any other rights of the Government with respect to the above-identified subject invention.

The Government is hereby granted an irrevocable power to inspect and make copies of the above-identified patent application.

Martha J. Collins

Signed on: 8/19/14

(P)  
**Contractor Name** Air Products and Chemicals, Inc.  
**Official's Name** Martha J. Collins  
**Official's Title** Director, Global Technology Centers  
**Business Address** 7201 Hamilton Boulevard, Allentown, PA 18195

PATENT