| FORM PTO-1619A Expires 06/30/89 OMB 0851-0027 | | | epartment of Commerce and Trademark Office PATENT | |
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| FORM PTO-1619B Expires 06/30/89 OMB 0851-0027 | Page 2 | U.S. Department of Commerce Patent and Trademark Office PATENT |
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| Name Betty Winchester | | |
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| Address (line 2) GC-62, MS 6F-067 (FORST | L) | - |
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| Address (line 4) Washington, D.C. 20585-01 | 62 | |
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| <i>indicated herein.</i> Katherine Baldwin | Wall Roll | 3-13-68 |

| Katherine Baldwin | | 3-13-68 |
|------------------------|-----------|---------|
| Name of Person Signing | Signature | Date |

PATENT

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11/951608

U.S. Department of Energy

PATENT ASSIGNMENT FORM

WHEREAS, I, Ranjani Siriwardane, citizen of the United States residing in Moragintown County of Monagala, State of W. Ja.; have invented certain new and useful improvements in REGENERABLE HYDROGEN CHLORIDE REMOVAL SORBENT AND REGENERABLE MULTI-FUNCTIONAL HYDROGEN SULFIDE AND HYDROGEN CHLORIDE REMOVAL SORBENT FOR HIGH TEMPERATURE GAS STREAMS, for which we are about to file an application for United States Letters Patent identified as S-110,897 and executed by me on the 19th day of November 20 07;

WHEREAS, the Government of the United States desires to acquire the entire right, title, and interest in and to said invention and in and to any Letters Patent wherever they may be issued thereon:

NOW. THEREFORE. to all whom it may concern, be it known that for and in consideration of the sum of One Dollar to me in hand paid by the Government of the United States, and for other good and valuable consideration, the receipt of which is hereby acknowledged, I by these presents do sell, assign, and transfer unto the said Government of the United States, as represented by the United States Department of Energy, and/or its assigns, the entire right, title, and interest in and to the said invention and in and to any and all Letters Patent wherever they may be granted thereon as well as reissues and extensions of said Letters Patent are or may be granted, reissued, or extended, as fully and entirely as the same would have been held or enjoyed by us had this assignment not been made.

I agree to make, execute, and deliver unto the Government of the United States, or to the United States Department of Energy, any and all papers, documents, affidavits, renewal, divisional and reissue applications, statements, or other instruments in such usual or other forms, terms and contents as may be required by the United States Department of Energy, or its duly authorized representative, in or incident to the prosecution or conduct of any and all applications, before as well as after the issuance of any Letters thereon, or in the adjustment or settlement of any interferences or other actions or proceedings that said applications may encounter or in which they may become involved and I agree that I will encounter or in which they may become involved and I agree that I will aid the Government of the United States in every way in protecting the inventions as may be requested by the United States Department of Energy or its assigns, except that any expenses arising through extending such assistance will be paid for by proper arrangement with the Government of the United States.

PATENT REEL: 020668 FRAME: 0391

RECORDED: 03/17/2008

| WITNESS: | INVENTOR(S): |
|------------------------------|---------------------------------------|
| Lisa A. Baker | Ranjani Siriwardane |
| (SEAL) | Date Nov 19/07 |
| | |
| Approved and consented to th | nis day of, 20 |
| ATTEST: | |
| (SEAL) | By |
| | Its |
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| Accepted for the Benefit of | the Government of the United States. |
| | UNITED STATES DEPARTMENT OF ENERGY |
| WITNESS: | · · · · · · · · · · · · · · · · · · · |
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By Assistant General Counsel for Patents