PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT2882704

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|--------------|----------------|
| JOSEPH ZAHKA | 07/18/2008 |
| AIWEN WU | 06/18/2008 |

RECEIVING PARTY DATA

| Name: | ENTEGRIS, INC. |
|-----------------|------------------|
| Street Address: | 129 CONCORD ROAD |
| City: | BILLERICA |
| State/Country: | MASSACHUSETTS |
| Postal Code: | 01821-4600 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 14294980 |

CORRESPONDENCE DATA

Fax Number:

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

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Email: DNARVAIZ@SPRINKLELAW.COM

Correspondent Name: SPRINKLE IP LAW GROUP
Address Line 1: 1301 W. 25TH STREET

Address Line 2: SUITE 408

Address Line 4: AUSTIN, TEXAS 78705

| ATTORNEY DOCKET NUMBER: | ENTG1940-2 |
|-------------------------|-------------------------|
| NAME OF SUBMITTER: | KATHARINA W. SCHUSTER |
| SIGNATURE: | /KATHARINA W. SCHUSTER/ |
| DATE SIGNED: | 06/03/2014 |

Total Attachments: 4

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PATENT 502836108 REEL: 033022 FRAME: 0116

ASSIGNMENT

This Assignment is made by Joseph ZAHKA, of Andover, MA, and Aiwen WU, of Malden, MA ("Assignors").

WHEREAS, Assignors have invented a new and useful invention entitled **METHOD AND APPARATUS FOR TREATING FLUIDS TO REDUCE MICROBUBBLES**, for which an application for United States Letters Patent was made on **October 23**, **2007**, bearing an application number of **11/919,110**; and

WHEREAS, Assignors believe themselves to be the original inventors of the invention including any and all improvements disclosed in said application ("Invention"); and

WHEREAS, the parties desire to have a recordable instrument assigning the entire right, title and interest in and to said Invention, said application, on any subsequently filed divisional, continuation, continuation-in-part, re-examination, reissue or other application for protection ("Applications"), and any patents, invention registrations or other forms of protection ("Patents") that may be granted for said Invention from any Applications in the United States and throughout the world;

NOW, THEREFORE, in accordance with the obligations to assign the Invention and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignors hereby sell, assign, and transfer to Entegris, Inc., a Delaware Corporation, having a principal place of business at 3500 Lyman Boulevard, Chaska, MN 55318 (hereinafter referred to as "Assignee"), the entire right, title, and interest in and to said Invention, said Applications and any Patents that may be granted for said Invention in the United States and throughout the world, including the right to file foreign applications directly in the name of the Assignee and to claim for any such foreign applications any priority rights to which such applications are entitled under international conventions, treaties, or otherwise.

Assignors agree that, upon request and without further compensation, but at no expense to Assignors, they and/or their legal representatives and assigns will do all lawful acts, including the execution of papers and the giving of testimony, that may be necessary or desirable for obtaining, sustaining, reissuing, or enforcing the Patents in the United States and throughout the world for said Invention, and for perfecting, recording, or maintaining the title of Assignee, its successors and assigns, to said Invention, said application, and any Patents granted for said Invention in the United States and throughout the world.

Assignors represent and warrant that they have not granted and will not grant to others any rights inconsistent with the rights granted herein.

PATENT REEL: 033022 FRAME: 0117 Assignors authorize and request the Commissioner for Patents of the United States and of all foreign countries to issue any Patents granted for said Invention, whether on said application or on any subsequently filed divisional, continuation, continuation-in-part, re-examination, reissue or other application, to Assignee, its successors and assigns, as the assignee of the entire interest in said Invention.

| IN WITNESS WHEREOF, I hereby set my hand and affix my seal this 18 day of |
|--|
| JULY 2008. MY END |
| State of Massachusetts |
| State of Massachusetts) Scounty on Malakesex |
| On this day and year aforesaid, before me personally appeared <u>Joseph Zahka</u> , known to me to |
| be the person described in and the person who executed the foregoing instrument of assignment and |
| he did acknowledge the same to be his free act and deed. |
| Walson Shop Marshin |
| Signature Deborah Blake Marsilio May Addit |
| Printed Name, Notary Public |
| My commissioner expires: 3-2a-(3 |
| IN WITNESS WHEREOF, I hereby set my hand and affix my seal this day of |
| , 2006. |
| Aiwen Wu |
| State of) |
|)ss |
| County of) |
| On this day and year aforesaid, before me personally appeared Aiwen Wu, known to me to |
| be the person described in and the person who executed the foregoing instrument of assignment and |
| he did acknowledge the same to be his free act and deed. |
| |
| Signature |
| Printed Name, Notary Public |
| My commissioner expires: |

PATENT REEL: 033022 FRAME: 0118

ASSIGNMENT

-1-

This Assignment is made by **Joseph ZAHKA**, of **Andover, MA**, and **Aiwen WU**, **of Malden**, **MA** ("Assignors").

WHEREAS, Assignors have invented a new and useful invention entitled **METHOD AND APPARATUS FOR TREATING FLUIDS TO REDUCE MICROBUBBLES**, for which an application for United States Letters Patent was made on **October 23**, **2007**, bearing an application number of **11/919,110**; and

WHEREAS, Assignors believe themselves to be the original inventors of the invention including any and all improvements disclosed in said application ("Invention"); and

WHEREAS, the parties desire to have a recordable instrument assigning the entire right, title and interest in and to said Invention, said application, on any subsequently filed divisional, continuation, continuation-in-part, re-examination, reissue or other application for protection ("Applications"), and any patents, invention registrations or other forms of protection ("Patents") that may be granted for said Invention from any Applications in the United States and throughout the world;

NOW, THEREFORE, in accordance with the obligations to assign the Invention and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignors hereby sell, assign, and transfer to Entegris, Inc., a Delaware Corporation, having a principal place of business at 3500 Lyman Boulevard, Chaska, MN 55318 (hereinafter referred to as "Assignee"), the entire right, title, and interest in and to said Invention, said Applications and any Patents that may be granted for said Invention in the United States and throughout the world, including the right to file foreign applications directly in the name of the Assignee and to claim for any such foreign applications any priority rights to which such applications are entitled under international conventions, treaties, or otherwise.

Assignors agree that, upon request and without further compensation, but at no expense to Assignors, they and/or their legal representatives and assigns will do all lawful acts, including the execution of papers and the giving of testimony, that may be necessary or desirable for obtaining, sustaining, reissuing, or enforcing the Patents in the United States and throughout the world for said Invention, and for perfecting, recording, or maintaining the title of Assignee, its successors and assigns, to said Invention, said application, and any Patents granted for said Invention in the United States and throughout the world.

Assignors represent and warrant that they have not granted and will not grant to others any rights inconsistent with the rights granted herein.

PATENT REEL: 033022 FRAME: 0119

| Assignors authorize and request the Commissioner for Patents of the United States and of all foreign countries to issue any Patents granted for said Invention, whether on said application or on any subsequently filed divisional, continuation, continuation-in-part, re-examination, reissue or other application, to Assignee, its successors and assigns, as the assignee of the entire interest in said Invention. |
|---|
| IN WITNESS WHEREOF, I hereby set my hand and affix my seal this day of |
| , 2008. |
| |
| State of) |
|)ss |
| County of |
| On this day and year aforesaid, before me personally appeared <u>Joseph Zahka</u> , known to me to be the person described in and the person who executed the foregoing instrument of assignment and he did acknowledge the same to be his free act and deed. |
| Signature |
| Printed Name, Notary Public My commissioner expires: |
| IN WITNESS WHEREOF, I hereby set my hand and affix my seal this 18 day of |
| <u>June</u> , 2008. |
| Aren Wa |
| Aiwen Wu |
| State of Massachuse 45) |
| County of Middle ser)ss |
| On this day and year aforesaid, before me personally appeared Aiwen Wu, known to me to |
| be the person described in and the person who executed the foregoing instrument of assignment and |
| - - - |

he did acknowledge the same to be his free act and deed.

Printed Name, Notary Public My commissioner expires: 11/6/05

Noreen Buckley Notary Public My Commission Expires November 6, 2009

REEL: 033022 FRAME: 0120

PATENT

RECORDED: 06/03/2014