PATENT ASSIGNMENT COVER SHEET

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

CONVEYING PARTY DATA

| Name | Execution Date |
|------------------|----------------|
| HARRY W. SARKAS | 08/06/2015 |
| IGOR V. BARSUKOV | 07/01/2015 |

RECEIVING PARTY DATA

| Name: | NANOPHASE TECHNOLOGIES CORPORATION | |
|-----------------|------------------------------------|--|
| Street Address: | 1319 MARQUETTE DRIVE | |
| City: | ROMEOVILLE | |
| State/Country: | ILLINOIS | |
| Postal Code: | 60446 | |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 13766467 |

CORRESPONDENCE DATA

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Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent

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Address Line 4: CHICAGO, ILLINOIS 60661

| ATTORNEY DOCKET NUMBER: | NTC02-032-US | |
|-------------------------|-------------------------|--|
| NAME OF SUBMITTER: | BMITTER: FRANK R. COZZI | |
| SIGNATURE: | /FRC/ | |
| DATE SIGNED: | 08/16/2015 | |

Total Attachments: 2

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PATENT 503438241 REEL: 036334 FRAME: 0495

ASSIGNMENT

WHEREAS, Harry W. Sarkas and Igor V. Barsukov referred to as ASSIGNORS, have invented a certain invention entitled ZINC ANODE ALKALINE ELECTROCHEMICAL CELLS CONTAINING BISMUTH, filed on February 13, 2013 and assigned Application Serial No 13/766,467; and

WHEREAS, Nanophase Technologies Corporation, incorporated in the State of Delaware, with a principal place of business at 1319 Marquette Drive, Romeoville, IL 60446, hereinafter referred to as ASSIGNEE, is desirous of acquiring the entire right, title and interest in, to and under said invention and the United States Letters Patent to be obtained therefor:

NOW THEREFORE, TO ALL WHOM IT MAY CONCERN:

Be it known that for good and valuable consideration, the receipt of which is hereby acknowledged, the ASSIGNORS hereby sell, assign and transfer to ASSIGNEE the full and exclusive right, title and interest to said invention and all Letters Patent of the United States to be obtained therefor on said applications or any non-provisional. continuation, division, renewal, substitute or reissue thereof, as well as any and all provisional applications from which said applications claim priority, for the full term or terms for which the same may be granted.

ASSIGNORS also assigns all of its rights, title, and interest in and to said invention, the worldwide right to file applications for Letters Patent for said invention. and all applications for Letters Patent for said invention, which may evolve therefrom, including the right to claim International Convention priority.

ASSIGNORS hereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment and sale.

ASSIGNORS further covenant that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said applications, said invention and said Letters Patent as may be known and accessible to ASSIGNORS. and ASSIGNORS will testify as to the same in any interference or litigation related thereto and will promptly execute and deliver to ASSIGNEE or its legal representative anv and all papers, instruments or affidavits required to apply for, obtain, maintain and enforce said applications, said invention and said Letters Patent which may be necessary or desirable to carry out the purposes hereof. An attorney of record is authorized and requested by the execution of this assignment to insert into this assignment the filing date and serial number of said application when officially known, and correct any minor typographical errors.

DATE

Harry W. Sarkas

DATE 7/1/2015

I. Barsuker.

lgor V. Barsukov

| STATE OF | Illinos Will |) ss. |
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| COUNTY OF | will |) |
| the same pers before me this the said instru set forth. | son whose name is subscrib s day in person and acknow ıment as his/her free and vo | a Notary Public in and for the County and rry W. Sarkas, personally known to me to be ed to the foregoing instrument, appeared ledged that (s)he signed, sealed and delivered luntary act for the uses and purposes therein |
| IN WIT | NESS WHEREOF, I have h | ereunto set my hand and Notarial Seal, this |
| | ************************************** | Notary Public |
| (SEAL) | | OFFICIAL SEAL |
| My Commissi | on Expires: | FRANK J. CESARIO Notary Public - State of Illinois My Commission Expires Jul 25, 2016 |
| STATE OF | IL | |
| COUNTY OF | Cook |) ss.) |
| State aforesai the same pers before me this the said instru set forth. | id, do hereby certify that Igo son whose name is subscrib a day in person and acknowlument as his/her free and vo | , a Notary Public in and for the County and V. Barsukov, personally known to me to be ed to the foregoing instrument, appeared edged that (s)he signed, sealed and delivered luntary act for the uses and purposes therein |
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RECORDED: 08/16/2015

PATENT REEL: 036334 FRAME: 0497