

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
JOHN S. NEWMAN	10/17/2013
RECEIVING PARTY DATA	
Name:	RESEARCH TRIANGLE INSTITUTE
Street Address:	3040 CORNWALLIS ROAD
Internal Address:	P.O. BOX 12194
City:	RESEARCH TRIANGLE PARK
State/Country:	NORTH CAROLINA
Postal Code:	27709
PROPERTY NUMBERS Total: 1	
Property Type	Number
PCT Number:	US2013064127
CORRESPONDENCE DATA	
Fax Number:	(919)755-2150
Phone:	919-755-8156
Email:	patentdocketing@wcsr.com
<i>Correspondence will be sent via US Mail when the email attempt is unsuccessful.</i>	
Correspondent Name:	CHRISTOPHER M. HUMPHREY
Address Line 1:	P.O. BOX 7037
Address Line 2:	WOMBLE CARLYLE SANDRIDGE & RICE, LLP
Address Line 4:	ATLANTA, GEORGIA 30357-0037
ATTORNEY DOCKET NUMBER:	R63759 1380WO (0175.5)
NAME OF SUBMITTER:	CHRISTOPHER M. HUMPHREY
Signature:	/christohper m. humphrey/
Date:	11/05/2013
Total Attachments: 3 source=R63759-1380WO-Assignment#page1.tif source=R63759-1380WO-Assignment#page2.tif source=R63759-1380WO-Assignment#page3.tif	

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WORLDWIDE INVENTION ASSIGNMENT

WHEREAS, the undersigned (hereinafter collectively referred to as "Assignor") has or may have invented certain inventions and improvements disclosed in the United States patent application entitled "**PARTICULATE HEAT TRANSFER FLUID AND RELATED SYSTEM AND METHOD**" and designated as

- International Application No. PCT/US2013/064127; filed October 9, 2013
- Application claims priority from Provisional Application No. 61/712,104, filed October 10, 2012, all applications listed above being hereinafter referred to as the "Application(s)";

WHEREAS, it is agreed that

RESEARCH TRIANGLE INSTITUTE
3040 Cornwallis Road
P.O. Box 12194
Research Triangle Park, NC 27709

(hereinafter referred to as "Assignee"), is entitled to or is desirous of acquiring all right, title and interest related to the same;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Assignor, by these presents, does sell, assign, and transfer unto Assignee the full, exclusive and entire right, title and interest, worldwide: (i) in and to all inventions and improvements disclosed and described in the Application(s); (ii) in and to said Application(s) and any other United States national stage, provisional, non-provisional, divisional, continuation, continuation-in-part, or design patent applications based in whole or in part upon said inventions or improvements and/or claiming priority to said Application(s) (the "U.S. Applications"); (iii) in and to any Patent Cooperation Treaty applications based in whole or in part upon said inventions or improvements and/or claiming priority to said Application(s); (iv) in and to any and all applications for industrial property protection, including without limitation applications for patent, utility model, inventor's certificate, and design, filed or which are hereafter filed in countries outside the United States (the "Foreign Applications") and which describe in whole or in part said inventions and improvements, said Foreign Applications to be

filed and issued in the name of Assignee or its designee insofar as permitted by applicable law; (v) in and to all patents or similar protective rights in the United States or elsewhere which may be granted on the U.S. Applications and Foreign Applications and all reissues, reexaminations, and extensions thereof, any and all such patents or other protective rights to issue in the name of Assignee and for the sole use and behoof of Assignee and its successors and assigns; and (vi) in and to the right to claim any applicable foreign or domestic priority rights arising from or required for any of the aforementioned applications under the terms of any applicable conventions, treaties, statutes, or regulations.

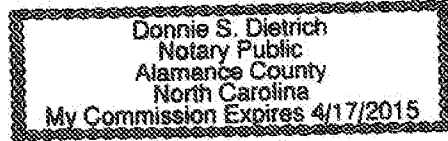
AND, for the same consideration, Assignor agrees to (i) communicate to Assignee, its successors, legal representatives, and assigns, any facts known to Assignor respecting said inventions and improvements or the history thereof and any and all documents, photographs, models, samples or other physical exhibits which may embody said inventions or improvements; (ii) sign or execute all lawful papers, applications, declarations, affidavits, assignments, and rightful oaths that may be requested by Assignee during prosecution or enforcement of any rights related to the inventions and improvements; (iii) testify in any proceedings relating to said inventions or improvements or rights granted therefor; and (iv) generally do everything possible to aid Assignee and its successors, legal representatives and assigns, to obtain and enforce proper protection for all said inventions and improvements in all countries throughout the world.

Assignor covenants with Assignee, its successors, legal representatives, and assigns, that no assignment, grant, mortgage, license, or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned. Assignor further agrees that Assignee, its successors, legal representatives, and assigns, may insert into this Assignment any further text necessary or desirable to define the Applications to which the Assignment pertains for purposes of recordation, and also agrees that the Assignment is effective at least as early as October 10, 2012 the earliest priority date of the Application(s).

October 17, 2013
Date

John S. Newman
John S. Newman

State of NC)
County of Durham)



I, Donnie S. Dietrich, a Notary Public for said County and State, do hereby certify that John S. Newman personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

Witness my hand and official seal, this the 17th day of October, 2013

(Official Seal)

Donnie S. Dietrich
Notary Public

My commission expires 4-17-2015

WCSR 31326148v1