

PATENT ASSIGNMENT

Electronic Version v1.1
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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY AGREEMENT
CONVEYING PARTY DATA	
Name	Execution Date
Fulcrum Bioenergy, Inc.	08/14/2012
RECEIVING PARTY DATA	
Name:	Hercules Technology Growth Capital, Inc.
Street Address:	c/o Cooley LLP, Attn: Kris Cachia
Internal Address:	101 California Street, 5th Floor
City:	San Francisco
State/Country:	CALIFORNIA
Postal Code:	94111
PROPERTY NUMBERS Total: 4	
Property Type	Number
Application Number:	13023497
Application Number:	13023505
Application Number:	13023510
PCT Number:	US1124108
CORRESPONDENCE DATA	
Fax Number:	4156932222
Phone:	(415) 693-2000
Email:	cachiakt@cooley.com
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.</i>	
Correspondent Name:	Cooley LLP
Address Line 1:	101 California Street, 5th Floor
Address Line 2:	Attn: Kris Cachia
Address Line 4:	San Francisco, CALIFORNIA 94111-5800
ATTORNEY DOCKET NUMBER:	305866-191

CH \$160.00 13023497

NAME OF SUBMITTER:

Kris Tsao Cachia

Total Attachments: 4

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INTELLECTUAL PROPERTY SECURITY AGREEMENT

This **INTELLECTUAL PROPERTY SECURITY AGREEMENT** is entered into as of August 14, 2012 by and between FULCRUM BIOENERGY, INC., a Delaware corporation ("Grantor"), and HERCULES TECHNOLOGY GROWTH CAPITAL, INC., a Maryland corporation ("Lender")

RECITALS

Lender has agreed to make certain advances of money and to extend certain financial accommodation to Grantor pursuant to that certain Loan and Security Agreement by and between Lender and Grantor (as amended, restated, supplemented or otherwise modified from time to time, the "**Loan Agreement**") dated of even date herewith. Capitalized terms used herein have the meaning assigned in the Loan Agreement. Lender is willing to make the credit extensions to Grantor, but only upon the condition, among others, that Grantor shall grant to Lender a security interest in all of Grantor's right title, and interest in, to and under all of the Collateral whether presently existing or hereafter acquired, subject to Permitted Liens.

NOW, THEREFORE, Grantor agrees as follows:

AGREEMENT

To secure performance of Grantor's obligations under the Loan Agreement, Grantor grants to Lender a security interest in all of Grantor's right, title and interest in Grantor's intellectual property listed on Exhibit A hereto (including without limitation those Copyrights, Patents and Trademarks), including without limitation all proceeds thereof (such as, by way of example but not by way of limitation, license royalties and proceeds of infringement suits). This security interest is granted in conjunction with the security interest granted to Lender under the Loan Agreement and is subject to the terms thereof. Each right, power and remedy of Lender provided for herein shall not preclude the simultaneous or later exercise by Lender of any or all other rights, powers or remedies.


[Signature Page Follows]

IN WITNESS WHEREOF, the parties have caused this Intellectual Property Security Agreement to be duly executed as of the first date written above.

Address of Borrower:

4900 Hopyard Road, Suite 220
Pleasanton, CA 94588
Attn: Eric Pryor

FULCRUM BIOENERGY, INC.,
a Delaware corporation



By: Eric N. Pryor

Title: Vice President and Chief Financial Officer

HERCULES TECHNOLOGY GROWTH CAPITAL, INC.,
a Maryland corporation

By: _____

Title: _____

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FULCRUM BIOENERGY, INC.,
a Delaware corporation

By: Eric N. Pryor

Title: Vice President and Chief Financial Officer

HERCULES TECHNOLOGY GROWTH CAPITAL, INC.,
a Maryland corporation



By:

K. Nicholas Marlitsch
Associate General Counsel

Title:

Exhibit A

Intellectual Property

I. Patent Applications:

Application No.	Date Filed	Attorney Docket No.	Description	Entity
13023497	02-08-2011	051955-000006	Processes for Recovering Waste Heat From Gasification Systems for Converting Municipal Solid Waste into Ethanol	Fulcrum BioEnergy, Inc.
13023505	02-08-2011	051955-000008	Product Recycle Loops in Process for Converting Municipal Solid Waste into Ethanol	Fulcrum BioEnergy, Inc.
13023510	02-08-2011	051955-000010	Gas Recycle Loops in Process for Converting Municipal Solid Waste into Ethanol	Fulcrum BioEnergy, Inc.
PCT/US11/24108	02-08-2011	051955-00007	Processes for Economically Converting Municipal Solid Waste into Ethanol	Fulcrum BioEnergy, Inc.

II. Licensed Intellectual Property Licensed Under the Following Agreements:

- a. Master Purchase & License Agreement, dated as of April 1, 2008, by and between InEnTec LLC and the Company, as amended.
- b. Purchase Order Contract & License Agreement, dated as of May 1, 2009, by and between InEnTec LLC and Fulcrum Sierra BioFuels, LLC.
- c. Development Agreement, dated as of May 27, 2008, by and among Nipawin Biomass Ethanol New Generation Co-operative Ltd., the Saskatchewan Research Council and Fulcrum Technology Company, LLC.
- d. Master Agreement, dated as of July 15, 2008, by and between Thermochem Recovery International, Inc. and the Company.
- e. Software License and Service Agreement, dated as of February 16, 2010, by and between Aspen Technology, Inc. and the Company.

III. Trades secrets, including extensive trade secrets relating to the Company's process for converting municipal solid waste to ethanol.