

<b>PATENT ASSIGNMENT COVER SHEET</b>
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EPAS ID: PAT5652499

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT

**CONVEYING PARTY DATA**

Name	Execution Date
PTTGC INNOVATION AMERICA CORPORATION	06/19/2019

**RECEIVING PARTY DATA**

<b>Name:</b>	PTT GLOBAL CHEMICAL PUBLIC COMPANY LIMITED
<b>Street Address:</b>	555/1 ENERGY COMPLEX BUILDING,
<b>Internal Address:</b>	BUILDING A, 14-18TH FLOOR
<b>City:</b>	BANGKOK
<b>State/Country:</b>	THAILAND
<b>Postal Code:</b>	10900

**PROPERTY NUMBERS Total: 1**

Property Type	Number
Patent Number:	10017793

**CORRESPONDENCE DATA**

**Fax Number:** (781)569-6248

*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.*

**Phone:** 7815696306

**Email:** rmannan@gcinnovationamerica.com

**Correspondent Name:** RAM MANNAN

**Address Line 1:** 45 CUMMINGS PARK

**Address Line 4:** WOBURN, MASSACHUSETTS 01801

<b>NAME OF SUBMITTER:</b>	RAMASAMY MANNAR MANNAN
<b>SIGNATURE:</b>	/Ramasamy Mannar Mannan/
<b>DATE SIGNED:</b>	08/05/2019

**Total Attachments: 10**

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## PATENT ASSIGNMENT AGREEMENT

This **PATENT ASSIGNMENT AGREEMENT** (this "**Patent Assignment**"), effective as of June 19, 2019, is made by and between PTTGC Innovation America Corp. d/b/a GC Innovation America (formerly known as Myriant Corporation), a Delaware Corporation, located at 42 Cummings Park, Woburn, MA 01801 ("**Assignor**"), and PTT Global Chemical Public Company Limited, a company operating and existing under the laws of the Kingdom of Thailand, located at 555/1 Energy Complex, Building A, 14th - 18th Floor, Vibhavadi Rangsit Road, Chatuchak, Chatuchak, Bangkok 10900 Thailand ("**Assignee**"). Assignor and Assignee are sometimes referred to herein as a "**Party**" and collectively as the "**Parties**."

### RECITALS:

**WHEREAS**, Assignor is a wholly-owned subsidiary of Assignee;

**WHEREAS**, Assignor is the owner of the patents and patent applications set forth on Schedule A (Myriant-GCIA Patent Portfolio) referred hereto as (the "**Patents**) and proprietary microorganisms set forth on Schedule B (Myriant-GCIA Microorganism) referred hereto as (the "**Microorganism**"); and

**WHEREAS**, Assignor has agreed to assign all of its right, title, and interest in and to the Patents and the Microorganism to Assignee, and Assignee has agreed to accept such assignment.

### AGREEMENT:

**NOW, THEREFORE**, for one (\$1.00) US dollar and other good and valuable consideration, for which the receipt and sufficiency is hereby acknowledged, Assignor and Assignee hereby agree as follows:

1. Assignor does hereby sell, assign, transfer, convey, and deliver to Assignee, its successors and permitted assigns, all of Assignor's right, title, and interest in and to the Microorganism and the Patents which may have issued arising from pending applications and any continuations, continuations-in-part, divisions, reissues, reexaminations, and extensions, and foreign patents and patent applications related thereto, and any rights to file applications and receive patents thereon, the same to be held and enjoyed by Assignee for its own use and enjoyment, and for the use and enjoyment of its successors, assigns, or other legal representatives, to the end of the term for which the said Patents are or may be granted or reissued, as fully and entirely as the same would have been held and enjoyed by Assignor if this assignment and sale had not been made; together with all claims for past and future damages by reason of infringement of the same, with the right to sue for past and future damages. Assignee hereby acknowledges that the transfer of Microorganism from Assignor to Assignee as initially referred to in the Material Transfer Agreement executed on March 20, 2019 by and between PTT Global Chemical Public Company Limited and PTTGC Innovation America Corporation has already been completed and the Parties hereby agree that such Material Transfer Agreement shall be incorporated as integral part of this Agreement.

2. Assignor hereby requests the Commissioner for Patents at the U.S. Patent and Trademark Office (the "Commissioner"), as well as his or her counterparts at the corresponding entities or agencies in any country or jurisdiction that may exercise authority over any of the Patents, to record this Patent Assignment. Assignor does hereby further request the Commissioner and his or her non-U.S. counterparts to issue any and all patents resulting from applications among the Patents or derived therefrom to Assignee as assignee of the entire interest therein.

3. Upon reasonable request by Assignee, Assignor will execute further papers (including, without limitation, the execution and delivery of any and all affidavits, declarations, oaths, samples, exhibits, specimens, assignments, powers of attorney, or other documentation) and to do such other acts as may be necessary or reasonably requested by Assignee to vest full title in and to the Patents in Assignee or that may be necessary to obtain, renew, issue, or enforce the Patents. Assignor does hereby authorize Assignee, and does hereby make, constitute, and appoint Assignee, and its officers, agents, successors, and assigns with full power of substitution as Assignor's true and lawful attorney-in-fact, with power, in Assignee's own name or the name of Assignor, to execute any such further papers; *provided*, that Assignee shall not execute any such further papers unless Assignor has failed to do so within five (5) Business Days of Assignee's delivery to Assignor of a written request therefor.

4. This Patent Assignment may be executed in any number of counterparts (including by facsimile and .pdf or other electronic file), each of which shall be deemed to be an original, and all of which together shall be deemed to be one and the same instrument. The Parties need not execute the same counterpart, and any facsimile or .pdf signature shall be deemed binding for all purposes hereof without delivery of an original signature being thereafter required.

5. This Patent Assignment shall be governed by, and construed and enforced in accordance with, the laws of the State of Delaware, without regard to its rules of conflict of laws. Each Party hereby expressly consents to the exclusive jurisdiction of the United States District Court for the District of Delaware, and, in the absence of such federal jurisdiction, each Party consents to be subject to the exclusive jurisdiction of the courts of the State of Delaware, in each case, for any lawsuit filed there arising from or relating to this Patent Assignment for the purposes of enforcing any arbitration award and waives, and will not assert, any arguments related to jurisdiction and venue in connection therewith. Service of process with respect thereto may be made upon the Parties by mailing a copy thereof by registered or certified mail, postage prepaid, to that Party at the applicable address provided below.


6. This Patent Assignment may be amended, supplemented, or otherwise modified only by a written instrument duly executed by the Parties. No waiver by any Party of any of the provisions hereof shall be effective unless explicitly set forth in writing and executed by the Party so waiving. The waiver by any Party of a breach of any provision of this Patent Assignment, whether intentional or not, shall not operate or be construed as a waiver of any subsequent breach. No delay or omission on the part of any Party in exercising any right, power, or remedy under this Patent Assignment shall operate as a waiver thereof.

7. This Patent Assignment shall be binding upon, and shall inure to the benefit of, the Parties and their respective successors and assigns.

**IN WITNESS WHEREOF**, Assignor and Assignee have caused this Patent Assignment to be executed as of the date first set forth above.

**ASSIGNOR:**

PTTGC INNOVATION AMERICA CORP.  
D/B/A GC INNOVATION AMERICA

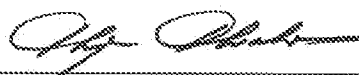
By:   
Name: Pariyanuch SaeKow  
Its: President and Chief Executive Officer

PTTGC INNOVATION AMERICA CORP.  
D/B/A GC INNOVATION AMERICA  
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Attention: Mr. Eric Conlin

**ASSIGNEE:**

PTT GLOBAL CHEMICAL PUBLIC  
COMPANY LIMITED

By:   
Name: Chaya Chandavasu  
Its: Senior Vice President of Science  
and Innovation

PTT GLOBAL CHEMICAL PUBLIC  
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Attention: Miss Patcharaporn  
Kaivalchatchawal

Schedule A (Myriant-GCIA Patent Portfolio)

Title	Country	Application No.
METABOLIC EVOLUTION OF ESCHERICHIA COLI STRAINS THAT PRODUCE ORGANIC ACIDS	US-PRO	61281483
	PCT	PCTUS2010057111
	AU	2010349739
	BE	EP2501798 Validated
	BR	2010349739
	CA	2775971
	CN	201080052405
	DE	EP2501798 Validated
	EPO	2010849167
	ES	EP2501798 Validated
	FR	EP2501798 Validated
	GB	EP2501798 Validated
	ID	WOO201201376
	IN	2913DELNP2012
	JP	2012-540023
	KR-DIV01	102012706498
	MX	2012005751
	MY	2012001641
	NL	EP2501798 Validated
	PH	12012500599
	SG	2012035762
	TH	1201001699
	TR	EP2501798 Validated
	US	13394176
US-DIV01	14491073	
VN	1201201002	
ORGANIC ACID PRODUCTION IN MICROORGANISMS BY COMBINED REDUCTIVE AND OXIDATIVE TRICARBOXYLIC ACID CYLCE PATHWAYS	US	61281486
	PCT	PCTUS2010057291
	US	13508095
FERMENTATION OF GLYCEROL TO ORGANIC ACIDS	PCT	PCTUS2011045001
	AU	2011373671
	BR	1120140013713
	CA	2841461
	CN	2011800736039
	EPO	118697846
	IN	504DELNP2014
	JP	2014521601
KR-DIV02	10-2017-7031583	

*Myriant*  
*Review*

	TH	1401000249
	US	14233830
IMPROVED FERMENTATION PROCESS FOR THE PRODUCTION OF ORGANIC ACID	PRO	61400596
	PCT	PCTUS2011046047
	CA	2807102
	US-DIV01	14702187
METHOD OF PRODUCING SUCCINIC ACID AND OTHER CHEMICALS USING SUCROSE-CONTAINING FEEDSTOCK	USPRO	61459446
	PCT	PCTUS2011064598
	BE	Validated EP 2652122
	BR	1120130146885
	CN	201180067397
	DE	Validated EP 2652122
	EPO	118493790
	ES	Validated EP 2652122
	FR	Validated EP 2652122
	GB	Validated EP 2652122
	ID	W00201303088
	MY	2013002172
	NL	Validated EP 2652122
	PH	12013501110
	SG	2013045752
	TH	1301003142
	TR	Validated EP 2652122
	US	13993150
	VN	1201302105
	ENVIRONMENTALLY FRIENDLY COALESCING AGENTS TOGETHER WITH ASSOCIATED INTELLECTUAL PROPERTY OF US PATENT APPLICATION NO. 14126367, INCLUDING US TRADEMARK APPLICATION NO.85361722 (MYRIFILM)	USPRO
PCT		PCTUS2012030553
BR		1120130318759
CA		2837365
CN-DIV01		2017104043033
CO		14006457
EPO		128007945
HK-DIV01		181014360
JP		2014515813
KR		1020147000901
MX		213014717
MY		2013004459
TH		1301006854
US		14126367
VN		1201303930
PRODUCTION OF MUCONIC ACID FROM GENETICALLY ENGINEERED MICROORGANISMS	USPRO	61632777
	MC2013-01PCT	PCTUS2013023690
	MC2014-05BE	Validated EP2809771
	MC2014-05BR	BR112014017686-8
	MC2014-05CA	2862051

	MC2014-05CN	2013800175601
	MC2014-05CN-DIV01	201710442475.x
	MC2014-05DE	Validated EP2809771
	MC2014-05EPO	137431235
	MC2014-05EPO-DIV01	170018113
	MC2014-05ES	Validated EP2809771
	MC2014-05FR	Validated EP2809771
	MC2014-05GB	Validated EP2809771
	MC2014-05HK-DIV01	181029844
	MC2014-05ID	P00201404568
	MC2014-05JP-DIV01	2017-097925
	MC2014-05KR	1020147024229
	MC2014-05MY	2014002156
	MC2014-05NL	Validated EP2809771
	MC2014-05TH	1401004320
	MC2014-05TR	Validated EP2809771
	MC2014-05US	14375071
	MC2014-05VN	1201402592
PRODUCTION OF ORGANIC ACIDS BY FERMENTATION AT LOW PH	MC2012-03PRO	61701293
	MC2013-03PCT	PCTUS2013059828
	MC2015-01BR	112015005461
	MC2015-01CA	2884266
	MC2015-01CN	2013800587372
	MC2015-01EPO	138364492
	MC2015-01ID	00201502105
	MC2015-01JP-DIV01	2018089765
	MC2015-01KR	1020157009348
	MC2015-01MY	1201500632
	MC2015-01TH	1501001419
	MC2015-01US	14428202
A PROCESS FOR PREPARING SUCCINATE ESTER	MC2013-01PRO	61912578
	MC2014-03PCT	PCTUS2014068823
	MC2016-03CA	2930711
	MC2016-03EPO	EP 3,077,525
	MC2016-03TH	1601003244
	MC2016-03US	15101015
	2016-03USDI	16/418641
A PROCESS FOR MANUFACTURING ACRYLIC ACID, ACRYLONITRILE AND 1,4-BUTANEDIOL FROM 1,3-PROPANEDIOL	MC2013-02PRO	61873328
	MC2014-02PCT	PCTUS2014053933
	MC2016-02CA	2922120
	MC2016-02CN	2014800487896
	MC2016-02EPO	148416563
	MC2016-02JP	2016540356
	MC2016-02KR	1020167008884
	MC2016-02TH	1601001195

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	MC2016-02US	14915554
METHOD OF PRODUCING SUCCINIC ACID AND OTHER CHEMICALS USING FACILITATED DIFFUSION FOR SUGAR IMPORT	MC2013-03PRO	61857300
	MC2014-01PCT	PCTUS2014047696
	MC2016-01BR	1120160014162
	MC2016-01CA	2919012
	MC2016-01CN	2014800415258
	MC2016-01EPO	148292642
	MC2016-01ID	00201600772
	MC2016-01IN	20167000838
	MC2016-01JP	2016529841
	MC2016-01KR	1020167004362
	MC2016-01MY	2016000123
	MC2016-01SA-DIV01	518391513
	MC2016-01TH	1601000383
	MC2016-01US	14906501
	A PROCESS FOR PREPARING SUCCINIC ACID AND SUCCINATE ESTER	MC2013-04PRO
MC2014-04PCT		PCTUS2014068840
MC2016-04US		15101042
POLYMERS FROM MUCONIC ACID ISOMERS AND ITS DERIVATIVES	MC2014-01PRO	62069613
	MC2015-01PCT	PCTUS2015057188
	MC2017-01AU	20152339679
	MC2017-01BR	1120170085666
	MC2017-01CN	2015800584937
	MC2017-01EPO	158553933
	MC2017-01HK	181014388
	MC2017-01ID	00201703376
	MC2017-01IN	201717013648
	MC2017-01JP	2017522868
	MC2017-01KR	1020177012263
	MC2017-01MY	2017701429
	MC2017-01TH	1701002307
	MC2017-01US	15522123
	NOVEL METHOD TO PRODUCE ACRYLIC ACID WITH ACETALDEHYDE AS THE MAIN BY-PRODUCT	MC2015-01PRO
MC2016-01PCT		PCTUS2016036819
MC2017-02CN		2016800335252
MC2017-02EPO		168083400
MC2017-02IN		201717041076
MC2017-02JP		2017564015
MC2017-02KR		1020187000804
MC2017-02LA		556
MC2017-02MY		2017704704
MC2017-02SG		11201709692
MC2017-02TH		1701007299
MC2017-02US		15580041
MC2017-02VN		1201800074

*Sumant*  
*Ramesh*

**Schedule B - MICROORGANISMS**

No.	Name	Species	Description
1	KJ122	<i>E. coli</i>	Original strain
2	MH28	<i>E. coli</i>	Glycerol strain
3	SD14	<i>E. coli</i>	Sucrose strain
4	YSS41	<i>E. coli</i>	High titer
5	MH141	<i>E. coli</i>	High titer
6	MYR1830	<i>E. coli</i>	more stable <i>cscBAK</i>
7	XZ174	<i>E. coli</i>	Sucrose Stabilized B duplicate KJ122-F background
8	KMS442	Yeast	High titer
9	KMS353	Yeast	High titer
10	MYR2514	Yeast	High titer
11	MYR2825	Yeast	Modify final D-LAC to grow faster
12	SD1755	Yeast	Improve total sugar utilization
13	KMS1017	Yeast	L-LAC low pyruvate
14	SD1566	Yeast	Evolved D-LAC
15	MYR2840	Yeast	Low pH tolerance
16	MYR3027	Yeast	Low pH tolerance )D-LAC(
17	MYR1674	<i>E. coli</i>	Final muconic acid
18	MYR1892	<i>E. coli</i>	Final muconic acid
19	MYR428	<i>E. coli</i>	Final muconic acid
20	MYR3049	Yeast	L-LAC strains containing various fructokinase cassettes
21	MYR3050	Yeast	L-LAC strains containing various fructokinase cassettes
22	MYR3051	Yeast	L-LAC strains containing various fructokinase cassettes
23	MYR3052	Yeast	L-LAC strains containing various fructokinase cassettes
24	MYR3053	Yeast	L-LAC strains containing various fructokinase cassettes
25	MYR3054	Yeast	L-LAC strains containing various fructokinase cassettes
26	MYR3055	Yeast	L-LAC strains containing various fructokinase cassettes
27	MYR3056	Yeast	L-LAC strains containing various fructokinase cassettes
28	MYR3057	Yeast	L-LAC strains containing various fructokinase cassettes
29	MYR3058	Yeast	L-LAC strains containing various fructokinase cassettes

No.	Name	Species	Description
30	MYR3059	Yeast	L-LAC strains containing various fructokinase cassettes
31	MYR3060	Yeast	L-LAC strains containing various fructokinase cassettes
32	MYR3061	Yeast	L-LAC strains containing various fructokinase cassettes
33	MYR3062	Yeast	L-LAC strains containing various fructokinase cassettes
34	MYR3063	Yeast	L-LAC strains containing various fructokinase cassettes
35	MYR3064	Yeast	L-LAC strains containing various fructokinase cassettes
36	MYR3065	Yeast	L-LAC strains containing various fructokinase cassettes
37	MYR3066	Yeast	L-LAC strains containing various fructokinase cassettes
38	MYR3067	Yeast	L-LAC strains containing various fructokinase cassettes
39	MYR3068	Yeast	L-LAC strains containing various fructokinase cassettes
40	MYR3069	Yeast	L-LAC strains containing various fructokinase cassettes
41	MYR3070	Yeast	L-LAC strains containing various fructokinase cassettes
42	MYR3071	Yeast	L-LAC strains containing various fructokinase cassettes
43	MYR3072	Yeast	L-LAC strains containing various fructokinase cassettes
44	MYR3073	Yeast	L-LAC strains containing various fructokinase cassettes
45	MYR3074	Yeast	L-LAC strains containing various fructokinase cassettes
46	MYR3075	Yeast	L-LAC strains containing various fructokinase cassettes
47	MYR3076	Yeast	L-LAC strains containing various fructokinase cassettes
48	MYR3077	Yeast	L-LAC strains containing various fructokinase cassettes
49	MYR3078	Yeast	L-LAC strains containing various fructokinase cassettes
50	MYR3079	Yeast	L-LAC strains containing various fructokinase cassettes

*January*

*Ream*

51	MYR3080	Yeast	L-LAC strains containing various fructokinase cassettes
52	MYR3081	Yeast	L-LAC strains containing various fructokinase cassettes
53	MYR3082	Yeast	L-LAC strains containing various fructokinase cassettes
54	MYR3083	Yeast	L-LAC strains containing various fructokinase cassettes

*James*  
*Row*