PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT7674964

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST

CONVEYING PARTY DATA

Name	Execution Date
P2 SCIENCE, INC.	11/18/2022

RECEIVING PARTY DATA

Name:	HG VENTURES LLC
Street Address:	6320 INTECH WAY
Internal Address:	C/O THE HERITAGE GROUP
City:	INDIANAPOLIS
State/Country:	INDIANA
Postal Code:	46278

PROPERTY NUMBERS Total: 127

Property Type	Number
Application Number:	61613867
Application Number:	61641742
Application Number:	61662639
PCT Number:	US2013030962
Application Number:	13801209
Application Number:	61673411
Application Number:	61784376
Application Number:	13946767
Application Number:	14415327
Application Number:	61790225
Application Number:	61926813
Application Number:	15111143
Application Number:	15620493
Application Number:	62010407
Application Number:	15317642
Application Number:	61941912
Application Number:	15119539
Application Number:	61994545
Application Number:	62024776

Property Type	Number
Application Number:	15311269
Application Number:	62015311
Application Number:	62163022
Application Number:	15320250
Application Number:	16057235
Application Number:	16541065
Application Number:	62034037
Application Number:	15501739
Application Number:	62043943
Application Number:	15507640
Application Number:	62107219
PCT Number:	US2016014557
Application Number:	15655374
Application Number:	16111001
Application Number:	62171063
Application Number:	15578629
Application Number:	62293686
PCT Number:	US2017017463
Application Number:	16101030
Application Number:	62352926
Application Number:	16081819
Application Number:	16855207
Application Number:	62217094
Application Number:	62259269
Application Number:	15759135
Application Number:	16458981
Application Number:	17231877
Application Number:	62270916
Application Number:	62357478
Application Number:	62384939
Application Number:	16331889
Application Number:	62395455
Application Number:	16333677
Application Number:	62539319
Application Number:	62617924
Application Number:	62662177
PCT Number:	US2018044657
Application Number:	16779232

Property Type	Number
Application Number:	17069696
Application Number:	18051599
Application Number:	62570555
Application Number:	62611269
Application Number:	62684111
Application Number:	62639784
Application Number:	16978076
Application Number:	62642486
Application Number:	62748161
Application Number:	17286651
Application Number:	62953850
Application Number:	63043243
Application Number:	63074197
Application Number:	63092406
Application Number:	63125841
PCT Number:	US2020066978
Application Number:	17133520
Application Number:	62961035
Application Number:	63043251
Application Number:	63092407
Application Number:	63125842
Application Number:	17758855
Application Number:	62961041
Application Number:	63043254
Application Number:	63092409
Application Number:	63125854
Application Number:	17758856
Application Number:	62985400
Application Number:	63043255
Application Number:	63092412
Application Number:	63125859
PCT Number:	US2021019692
Application Number:	17185619
Application Number:	63041411
Application Number:	17772373
Application Number:	17497703
Application Number:	17758053
Application Number:	63159274

Property Type	Number
PCT Number:	US2022019811
Application Number:	63159275
PCT Number:	US2022019814
Application Number:	63189540
Application Number:	63235566
PCT Number:	US2022029647
Application Number:	17746615
Application Number:	63189543
PCT Number:	US2022029649
Application Number:	17746624
Application Number:	63189544
PCT Number:	US2022029650
Application Number:	17746626
Application Number:	63189545
PCT Number:	US2022029651
Application Number:	17746628
Application Number:	63189546
Application Number:	17746632
Application Number:	63234292
Application Number:	17820845
Application Number:	63234294
Application Number:	17820861
Application Number:	63257278
PCT Number:	US2022078396
Application Number:	63245418
PCT Number:	US2022076615
Application Number:	63293483
Application Number:	63337568
Application Number:	63343919
Application Number:	63222170
PCT Number:	US2022073805
Application Number:	17812956

CORRESPONDENCE DATA

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Address Line 2:	SUITE 3500
Address Line 4:	INDIANAPOLIS, INDIANA 46204

ATTORNEY DOCKET NUMBER:	HER20-GN026
NAME OF SUBMITTER:	LINDSAY R. BUSER
SIGNATURE:	/LINDSAY R. BUSER/
DATE SIGNED:	12/03/2022

Total Attachments: 17

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PATENT SECURITY AGREEMENT

This PATENT SECURITY AGREEMENT (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the "Patent Security Agreement") dated November 18, 2022, is made by the Persons listed on the signature pages hereof (collectively, the "Grantors") in favor of HG Ventures LLC, as collateral agent ("HGV" and the "Collateral Agent") for the Holders of Secured Obligations. Capitalized terms used herein and not otherwise defined herein shall have the meanings assigned to such terms in the Notes, Purchase Agreement and the Security Agreement referred to therein.

WHEREAS, P2 SCIENCE, INC., a Delaware corporation (the "Borrower"), HGV, and each other Purchaser have entered into a Note Purchase Agreement, dated as of November 18, 2022 (the "Closing Date") (as amended, restated, amended and restated, extended, supplemented or otherwise modified from time to time, the "Purchase Agreement"), pursuant to which the Borrower has authorized the issuance and sale to the Purchasers of the Borrower's Secured Convertible Promissory Notes in the original aggregate principal amount of up to $1,200,000 (herein referred to individually as a "Note" and collectively as the "Notes").

WHEREAS, in connection with the Purchase Agreement, the Grantors have entered into a Security Agreement dated as of the Closing Date (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the "Security Agreement") in order to induce the Purchasers to purchase the Notes.

WHEREAS, under the terms of the Security Agreement, the Grantors have granted to the Collateral Agent, for the benefit of the Holders of Secured Obligations, a security interest in, among other property, certain intellectual property of the Grantors, and have agreed as a condition thereof to execute this Patent Security Agreement for recording with the United States Patent and Trademark Office.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, each Grantor agrees as follows:

SECTION 1. Grant of Security. Each Grantor hereby grants to the Collateral Agent for the benefit of the Holders of Secured Obligations a security interest in all of such Grantor's right, title and interest in and to the following (the "Lien Collateral"):

(a) the issued and pending Patents (as defined in the Security Agreement) in the United States Patent and Trademark Office set forth in Schedule A hereto.

This Agreement is not to be construed as an assignment of any Patent or Patent application.

SECTION 2. Recordation. This Patent Security Agreement has been executed and delivered by the Grantors for the purpose of recording the grant of security interest herein with the United States Patent and Trademark Office. Each Grantor authorizes and requests that the Commissioner for Patents and the Commissioner for Trademarks record this Patent Security Agreement.

SECTION 3. Execution in Counterparts. This Patent Security Agreement may be executed in any number of counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same agreement.

SECTION 4. Grants, Rights and Remedies. This Patent Security Agreement has been entered into in conjunction with the provisions of the Security Agreement. Each Grantor does hereby acknowledge and confirm that the grant of the security interest hereunder to, and the rights and remedies of, the Collateral Agent with respect to the Lien Collateral are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated herein by reference as if fully set forth herein. In the event of any conflict between the terms of this Patent Security Agreement and the terms of the Security Agreement, the terms of the Security Agreement shall govern.

SECTION 5. Governing Law. This Patent Security Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware.

SECTION 6. Severability. In case any one or more of the provisions contained in this Patent Security Agreement should be held invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein and in the Security Agreement shall not in any way be affected or impaired thereby (it being understood that the invalidity of a particular provision in a particular jurisdiction shall not in and of itself affect the validity of such provision in any other jurisdiction). The parties hereto shall endeavor in good-faith negotiations to replace the invalid, illegal or unenforceable provisions with valid provisions the economic effect of which comes as close as possible to that of the invalid, illegal or unenforceable provisions.

SECTION 7. Termination. At such time as the Security Agreement is terminated pursuant to its terms, this Patent Security Agreement shall automatically terminate and the Collateral Agent shall, upon the written request of the Grantors, execute and deliver to the Grantors all deeds, releases, assignments and other instruments as may be necessary or proper to release, reassign and reconvey to and re-vest in the Grantors the entire right, title and interest to the Lien Collateral previously granted, assigned, transferred and conveyed to the Collateral Agent for the benefit of the Holders of Secured Obligations by the Grantors pursuant to this Patent Security Agreement, as fully as if this Patent Security Agreement had not been made.

[Signature Pages Follow]

IN WITNESS WHEREOF, each Grantor has caused this Patent Security Agreement to be duly executed and delivered by its officer thereunto duly authorized as of the date first above written.

P2 SCIENCE, INC.

By: DocuSigned by: ACC949FD8B8D466... _____

Name: Neil Burns
Title: CEO

HG VENTURES LLC,
as Collateral Agent

By: DocuSigned by:
Kip Frey
FD60FC0708014E5...

Name: Kip Frey
Title: Managing Director

SCHEDULE A

U.S. PATENTS AND DESIGN PATENTS

(See attached)

Hoxie Reference Number	Status	Filed Date	Applic. No.	Pub Date	Pub. No.	Grant Date	Patent No.
GUERBET ALCOHOLS AND METHODS FOR PREPARING AND USING SAME							
Improved synthesis from triglycerides via ozonolysis (surfactants useful in cosmetic, detergent products)							
P2S-01-PROV	**Expired**	3/21/2012	61/613,867				
P2S-01B-PROV	**Expired**	5/2/2012	61/641,742				
P2S-01C-PROV	**Expired**	6/21/2012	61/662,639				
P2S-01-PCT	**Expired**	3/13/2013	PCT/US2013/030962	9/26/2013	WO 2013/142206		
P2S-01-CA	**Granted**	3/13/2013	2867698			July 7, 2020	2867698
P2S-01-EP	**Granted**	3/13/2013	13764490.2	1/28/2015	2828231	November 6, 2019	2828231
EP Patent validated in: Switzerland, Germany, France, and the United Kingdom							
P2S-01-JP	**Granted**	3/13/2013	2015-501761	4/13/2015	JP2015510932 (A)	April 12, 2019	6510400
P2S-01-JPD	**Granted**	3/13/2013	2017-240485	4/5/2018	JP 2018-052975 A1	September 27, 2019	6591518
P2S-01-US	**Granted**	3/13/2013	13/801,209	10/17/2013	US 2013-0274511 A1	December 12, 2017	9,840,449
OZONOLYSIS OPERATIONS FOR GENERATION OF REDUCED AND/OR OXIDIZED PRODUCT STREAMS							
Continuous processes for synthesis of alcohols, diacids and acid-esters (e.g., azaleic acid and nonanal) from biological feedstocks							
P2S-02-PROV	**Expired**	7/19/2012	61/673,411				
P2S-02B-PROV	**Expired**	3/14/2013	61/784,376				
P2S-02-PCT	**Expired**	7/19/2013	PCT/US2013/051357	1/23/2014	WO 2014/015290		
P2S-02-CA	**Granted**	7/19/2013	2878935			August 13, 2019	2878935
P2S-02-EP	**Granted**	7/19/2013	13820043.1			September 11, 2019	2874689
EP Patent validated in: Switzerland, Germany, France, and the United Kingdom							
P2S-02-JP	**Granted**	7/19/2013	2015-523292	9/8/2017		September 8, 2017	6204469
P2S-02-US	**Granted**	7/19/2013	13/946,767	1/30/2014	US 2014-0031584 A1	May 19, 2015	9,035,091
P2S-02-US2	**Granted**	1/16/2015	14/415,327	7/2/2015	US 2015-0183707 A1	March 28, 2017	9,604,898
METHODS OF PREPARING ALDEHYDIC MATERIALS							
P2S-03-PROV	**Expired**	3/15/2013	61/790,225				
TERPENE-DERIVED ACIDS AND ESTERS AND METHODS FOR PREPARING AND USING SAME							
Novel F&F acids and esters synthesized via mixed oxidative/reductive ozonolysis of alkoxycitronellenes							
P2S-04-PROV	**Expired**	1/13/2014	61/926,813				
P2S-04-PCT	**Expired**	1/13/2015	PCT/US2015/011272	7/16/2015	WO 2015/106293		
P2S-04-EP	**Prosecuting**	1/13/2015	15734971.3	11/23/2016	3094615		
P2S-04-US	**Granted**	7/12/2016	15/111,143	11/17/2016	US-2016-0332952-A1	June 20, 2017	9,682,914
P2S-04-USD	**Granted**	6/12/2017	15/620,493	9/28/2017	US-2017-0275230-A1	May 7, 2019	10,280,131

TERPENE-DERIVED COMPOUNDS AND METHODS FOR PREPARING AND USING SAME							
Novel F&F, further derivatives of the acids and ester from P2S-04							
P2S-05-PROV	**Expired**	6/10/2014	62/010,407				
P2S-05-PCT	**Expired**	6/10/2015	PCT/US2015/035097	17-Dec-15	WO 2015/191706		
P2S-05-US	**Granted**	12/9/2016	15/317,642	4/27/2017	US-2017-0113988-A1	September 11, 2018	10,071,941
SUBSTITUTED DELTA-LACTONES AND METHODS OF PREPARING SAME							
Novel F&F compounds synthesized via ozonolysis and cyclization							
P2S-06-PROV	**Expired**	2/19/2014	61/941,912				
P2S-06-PCT	**Expired**	2/19/2014	PCT/US2015/016371	8/27/2015	WO 2015/126936 A1		
P2S-06-EP	**Granted**	2/18/2015	15751561.0	12/28/2016	3107904	June 5, 2019	3107904
P2S-06-DE	**Granted**	2/18/2015	15751561.0	12/28/2016	3107904	June 5, 2019	3107904
P2S-06-FR	**Granted**	2/18/2015	15751561.0	12/28/2016	3107904	June 5, 2019	3107904
P2S-06-CH	**Granted**	2/18/2015	15751561.0	12/28/2016	3107904	June 5, 2019	3107904
P2S-06-GB	**Granted**	2/18/2015	15751561.0	12/28/2016	3107904	June 5, 2019	3107904
P2S-06-US	**Granted**	8/17/2016	15/119,539	3/2/2017	US-2017-0057940-A1	July 3, 2018	10,011,582
MACROCYCLIC COMPOUNDS, POLYMERS, AND METHODS FOR MAKING SAME							
Polyester and polyamide polymers and macrocyclic lactones derived from citronellic acid and ester reactants (& analogs)							
P2S-07-PROV	**Expired**	5/16/2014	61/994,545				
P2S-07B-PROV	**Expired**	7/15/2014	62/024,776				
P2S-07-PCT	**Expired**	5/15/2015	PCT/US2015/031151	11/19/2015	WO 2015/175978		
P2S-07-US	**Granted**	11/15/2016	15/311,269	3/30/2017	US-2017-0088536-A1	October 10, 2017	9,783,520
FILM OZONOLYSIS IN A TUBULAR OR MULTITUBULAR REACTOR							
Multi-tubular falling film reactors for ozonolysis, useful for making methoxymelonal, azelaldehyde, *nonanal, azelaic acid, other diacids* ***from fatty acid esters,*** *and additional materials from terpenes*							
P2S-08-PROV	**Expired**	6/20/2014	62/015,311				
P2S-08B-PROV	**Expired**	5/18/2015	62/163,022				
P2S-08-PCT	**Expired**	6/19/2015	PCT/US2015/036589	12/23/2015	WO 2015/196019		
P2S-08-EP	**Granted**	6/19/2015	15809565.3	4/26/2017	3157898	August 10, 2022	3157898
EP Patent validated in: Switzerland, Germany, France, and the United Kingdom							
P2S-08-JP	**Granted**	6/19/2015	2016-573956	9/7/2017	2017-525663	April 6, 2020	6687547
P2S-08-JPD	**Granted**	2/13/2020	2020-022255	6/11/2020	2020-089887	July 20, 2022	7104083
P2S-08-US	**Granted**	12/19/2016	15/320,250	8/31/2017	US-2017-0247306-A1	September 11, 2018	10,071,944
P2S-08-USC	**Granted**	8/7/2018	16/057,235	2/7/2019	US-2019-0039982-A1	October 1, 2019	10,428,001
P2S-08-USC2	**Granted**	8/14/2019	16/541,065	2/6/2020	US-2020-0039910-A1	March 2, 2021	10,934,239

FRAGRANCES FROM THE ESTERS OF FATTY ACIDS							
Directed to mainly to 9-hydroxy-9-methylnonanal as an F&F ingredient							
P2S-09-PROV	**Expired**	8/6/2014	62/034,037				
P2S-09-PCT	**Expired**	8/6/2015	PCT/US2015/044012	9/28/2017	WO 2016/022803		
P2S-09-EP	**Abandoned**	8/6/2015	15829077.5				
P2S-09-US	**Abandoned**	2/3/2017	15/501,739	08/31/17	US-2017-0247314-A1		
POLYETHERS, POLYAMINES, POLYTHIOETHERS, AND METHODS FOR MAKING SAME							
CITROPOL: **Ether, amine and thioether homopolymers derived from citronellol (n=2-20, mean n=2)**							
P2S-10-PROV	**Expired**	8/29/2014	62/043,943				
P2S-10-PCT	**Expired**	8/28/2015	PCT/US2015/047397	3/3/2016	WO 2016/033437		
P2S-10-CA	**Granted**	8/28/2015	2959532			March 10, 2020	2,959,532
P2S-10-EP	**Allowed**	8/28/2015	15836695.5				
P2S-10-US	**Granted**	8/28/2015	15/507,640	10/5/2017	US-2017-0283553-A1	August 28, 2018	10,059,801
FRAGRANCE AND FLAVOR COMPOSITIONS COMPRISING NEOPENTYL GLYCOL DIACETATE							
Flavor and Fragrance compositions comprising Neopentyl Glycol Diacetate [*licensed to BASF]*							
P2S-11-PROV	**Expired**	1/23/2015	62/107,219				
P2S-11-PCT	**Expired**	1/22/2016	PCT/US2016/014557	7/28/2016	WO 2016/118882		
P2S-11-BR	**Granted**	1/22/2016	BR 11 2017 015827 2			May 10, 2022	BR112017015 8272
P2S-11-CA	**Granted**	1/22/2016	2,974,102			June 2, 2020	2,974,102
P2S-11-CN	**Prosecuting**	1/22/2016	201680017567.7	12/1/2017	107428638		
P2S-11-CND	**Prosecuting**	8/4/2022	202210930929.9				
P2S-11-CN-HK	**Abandoned**	1/22/2016	18105257.7	8/31/2018	1245760A		
P2S-11-EP	**Granted**	1/22/2016	16740848.3	11/29/2017	3247691	September 16, 2020	3247691
EP Patent validated in: Belgium, Switzerland, Germany, Spain, France, the United Kingdom, Italy, the Netherlands, Poland, and Turkey							
P2S-11-EP-HK	**Granted**	1/22/2016	18106921.1	9/21/2018	1247186A	April 19, 2021	HK1247186
P2S-11-ID	**Granted**	1/22/2016	P-00201705306	4/20/2018	2018/04252	September 20, 2019	IDP000062693
P2S-11-IN	**Granted**	1/22/2016	201717026372	11/17/2017	201717026372 A	August 10, 2020	343838
P2S-11-JP	**Granted**	1/22/2016	2017-558346	4/19/2018	2018-510954	May 12, 2020	6703550
P2S-11-MY	**Granted**	1/22/2016	PI 2017702669			January 5, 2021	MY181719A
P2S-11-PCT-CON-T1 (US)	**Granted**	7/20/2017	15/655,374	2/8/2018	US-2018-0037844-A1	September 11, 2018	10,072,233

P2S-11-PCT-CON2 (US)	**Abandoned**	8/23/2018	16/111,001				
OLFACTIVE COMPOSITIONS COMPRISING CYCLOHEXYL-ALKYL CARBINOLS							
Flavor, fragrance and cooling compositions comprising cyclohexyl carbinols, and synthesis methods							
P2S-12-PROV	**Expired**	6/4/2015	62/171,063				
P2S-12-PCT	**Expired**	6/4/2015	PCT/US2016/035829	12/8/2016	WO 2016/197000		
P2S-12-EP	**Prosecuting**	6/3/2016	16804564.9	4/11/2018	3303534		
P2S-12-US	**Granted**	11/30/2017	15/578,629	6/14/2018	US-2018-0163158-A1	February 2, 2021	10,907,116
FRAGRANCE COMPOSITIONS COMPRISING COMPOUNDS PRODUCED FROM FATTY ACIDS WITH DESIRABLE OLFACTORY							
Directed to mainly to F&F compositions comprising 9-hydroxy-9-methylnonanal							
P2S-13-PROV	**Expired**	2/10/2016	62/293,686				
P2S-13-PCT	**Expired**	2/10/2017	PCT/US2017/017463	08/17/17	WO 2017/139637		
P2S-13-EP	**Abandoned**	2/10/2017	17750867.8	12/19/18	3414309		
P2S-13-PCT-CON (US)	**Abandoned**	8/10/2018	16/101,030	12/06/18	US-2018-0346844-A1		
FLOW-THROUGH REACTORS FOR THE CONTINUOUS QUENCHING OF PEROXIDE MIXTURES AND METHODS COMPRISING							
Flow-through reactors useful for ozonolysis of fatty acids generally, especially recirculating reactors (in use): Relevant to all							
P2S-14-PROV	**Expired**	6/21/2016	62/352,926				
P2S-14-PCT	**Expired**	6/21/2017	PCT/US2017/038577	12/28/2017	WO 2017/223220		
P2S-14-CA	**Pending**	6/21/2017	3,026,192				
P2S-14-EP	**Prosecuting**	6/21/2017	17816151.9	4/24/2019	3472124		
P2S-14-JP	**Granted**	6/21/2017	2018-566851	9/5/2019	2019-524661	February 21, 2022	7028457
P2S-14-US	**Granted**	8/31/2018	16/081,819	3/28/2019	US-2019-0091645-A1	June 2, 2020	10,668,446
P2S-14-USC	**Abandoned**	4/22/2020	16/855,207				
OZONOLYSIS PROCESS INVOLVING AMINE COMPOUNDS							
P2S-16-PROV	**Abandoned**						
PREPARATION OF 3-HYDROXY-3,6-DIMETHYLHEXAHYDROBENZOFURAN-2-ONE AND DERIVATIVES THEREOF							
Improved synthesis of an enriched enantiopurity Mint Lactone and useful F&F derivatives thereof							
P2S-17-PROV	**Expired**	9/11/2015	62/217,094				
P2S-17B-PROV	**Expired**	11/24/2015	62/259,269				

P2S-17-PCT	**Expired**	9/12/2016	PCT/US2016/051334	3/16/2017	WO/2017/044957		
P2S-17-CA	**Pending**	9/12/2016	2,997,950				
P2S-17-EP	**Granted**	9/12/2016	16845276.1	7/18/2018	3347348	November 17, 2021	3347348
EP Patent validated in: Belgium, Italy, The Netherlands, Spain, Turkey, Switzerland, Germany, France, and the United Kingdom							
P2S-17-EPD	**Prosecuting**	11/16/2021	21208537.7	7/27/2022	4032882		
P2S-17-JP	**Granted**	9/12/2016	2018-512996	11/8/2018	2018-532716	November 19, 2021	6980648
P2S-17-JPD	**Pending**	11/17/2021	2021-187099	3/8/2022	2022-036968		
P2S-17-US	**Granted**	3/9/2018	15/759,135	1/3/2019	US-2019-0002424-A1	September 3, 2019	10,399,954
P2S-17-USD	**Granted**	7/1/2019	16/458,981	10/24/2019	US-2019-0322635-A1	May 18, 2021	11,008,299
P2S-17-USDC	**Granted**	4/15/2021	17/231,877	7/29/2021	US 2021-0230132 A1	September 6, 2022	11,434,216
Preparation of 3-Hydroxy-3,6-Dimethylhexahydrobenzofuran-2-One and Derivatives Thereof							
P2S-18-PROV	**Expired**	12/22/2015	62/270,916				
Enantiopure Methoxy and Hydroxy Melonals from (S)- and (R)-Citronellol and/or its Esters							
P2S-19-PROV	**Expired**	7/1/2016	62/357,478				
METHODS FOR THE CONTINUOUS ALKOXYLATION AND DERIVATIZATION OF TERPENES							
Continuous alkoxylation methods, and novel methoxy derivatives of terpenes (e.g., dihydromyrcene) for F&F Pendings							
P2S-20-PROV	**Expired**	9/8/2016	62/384,939				
P2S-20-PCT	**Expired**	9/8/2016	PCT/US2017/050808	3/25/2018	WO 2018/049252		
P2S-20-CA	**Pending**	9/8/2017	3036092				
P2S-20-EP	**Granted**	9/8/2017	17849671.7	7/17/2019	3509737	February 24, 2022	3,512,631
P2S-20-JP	**Prosecuting**	9/8/2017	2019-512971	10/17/2019	2019-529392	May 20, 2022	7076818
P2S-20-US	**Granted**	3/8/2019	16/331,889	7/11/2019	US-2019-0210948-A1	May 18, 2021	11,008,271
USES OF VANADIUM TO OXIDIZE ALDEHYDES AND OZONIDES							
Improved reagent for oxidative work-up of ozonolysis product stream, useful to make azaleic acid, nonanoic acid, and their esters							
P2S-21-PROV	**Expired**	9/16/2016	62/395,455				
P2S-21-PCT	**Expired**	9/15/2017	PCT/US2017/051817	3/22/2018	WO 2018/053289		
P2S-21-EP	**Granted**	9/15/2017	17851621.7	7/24/2019	3512631	March 23, 2022	3,512,631
EP Patent validated in: Switzerland, Germany, France, and the United Kingdom							
P2S-21-US	**Granted**	3/15/2019	16/333,677	7/25/2019	US-2019-0225558-A1	June 30, 2020	10,696,605
POLYETHER DERIVATIVES, USES, AND METHODS OF MAKING THE SAME							
CITROPOL : Novel homopolymers of citronellol and ester/ether derivatives, n=2-20mers; cosmetic, consumer, industrial compositions							
P2S-22-PROV	**Expired**	7/31/2017	62/539,319				

P2S-22B-PROV	**Expired**	1/16/2018	62/617,924				
P2S-22C-PROV	**Expired**	4/24/2018	62/662,177				
P2S-22-PCT	**Expired**	7/31/2018	PCT/US2018/044657	2/7/2019	WO 2019/028053		
P2S-22-AU	**Pending**	7/31/2018	2018309737				
P2S-22-BR	**Pending**	7/31/2018	BR1120200020591				
P2S-22-CA	**Pending**	7/31/2018	3,071,445				
P2S-22-CN	**Prosecuting**	7/31/2018	201880063571.6	5/12/2020	CN 111148779 A		
P2S-22-CN-HK	**Published**	7/31/2018	62020017015.2	1/22/2021	40027530 A		
P2S-22-EP	**Prosecuting**	7/31/2018	18842411.3	6/10/2020	3661993		
P2S-22-EP-HK	**Published**	7/31/2018	62020021730	3/12/2021	40031667		
P2S-22-IN	**Pending**	7/31/2018	202017007082	9/4/2020	202017007082		
P2S-22-JP	**Pending**	7/31/2018	2020-504666	10/15/2020	2020-530044		
P2S-22-KR	**Pending**	7/31/2018	10-2020-7004694				
P2S-22-MX	**Pending**	7/31/2018	MX/a/2020/001347	9/25/2020			
P2S-22-MY	**Pending**	7/31/2018	PI 2020000498				
P2S-22-PCTC (US)	**Granted**	1/31/2020	16/779,232	5/28/2020	US 2020-0165383 A1	November 24, 2020	10,844,169
P2S-22-PCTC2 (US)	**Allowed**	10/13/2020	17/069,696	1/28/2021	US-2021-0024691-A1		
P2S-22-PCTC3	**Pending**	11/1/2022	18/051,599				
P2S-22-ZA	**Granted**	7/31/2018	2020/00560			August 31, 2022	2020/00560
P2S-22-ZAD	**Pending**	7/31/2018	2020/08011				
ANTI-INFECTIVE AGENTS FOR TREATING MICROBIAL AND PARASITIC DISEASES							
P2S-23-PROV	**Abandoned**	10/10/2017	62/570,555				

METHODS OF REDUCING OZONOLYSIS PRODUCT STREAMS TO CARBONYL PRODUCTS							
P2S-24-PROV	**Abandoned**	12/28/2017	62/611,269				
P2S-24B-PROV	**Abandoned**	6/12/2018	62/684,111				

POLYETHER DERIVATIVES, USES, AND METHODS OF MAKING THE SAME							
CITROPOL V2 Heteropolymers derived from citronellol with alkanediols, dicarboxylic acids and other difunctional monomers							
P2S-25-PROV	**Expired**	3/7/2018	62/639,784				
P2S-25-PCT	**Expired**	3/7/2019	PCT/US2019/021187	9/12/2019	WO 2019/173614		
P2S-25-AU	**Pending**	3/7/2019	2019230126				
P2S-25-BR	**Pending**	3/7/2019	BR1120200181471				
P2S-25-CA	**Pending**	3/7/2019	3,093,127				
P2S-25-CN	**Pending**	3/7/2019	201980030437.0	2/19/2021	CN 112384551 A		

P2S-25-CN-HK	**Pending**	7/28/2021	62021035652.8	11/5/2021	40046569		
P2S-25-EP	**Prosecuting**	3/7/2019	19763232.6	1/13/2021	3762444		
P2S-25-EP-HK	**Pending**	6/8/2021	62021032680.2	9/10/2021	40043197		
P2S-25-IN	**Pending**	3/7/2019	202017043236	9/24/2021	202017043236 A		
P2S-25-JP	**Pending**	3/7/2019	2020-546382	7/15/2021	2021-517182		
P2S-25-KR	**Pending**	3/7/2019	10-2020-7028864				
P2S-25-MX	**Pending**	3/7/2019	MX/a/2020/009312				
P2S-25-MY	**Pending**	3/7/2019	PI 2020004569				
P2S-25-US	**Pending**	9/3/2020	16/978,076	12/17/2020	US 2020-0392287 A1		
P2S-25-ZA	**Pending**	3/7/2019	2020/05537				

THE OXIDATION OF CARBON-HYDROGEN BONDS USING OZONE							
P2S-26-PROV	**Abandoned**	3/13/2018	62/642,486				

NEW METHODS FOR DISPROPORTIONATION QUENCHING OF OZONIDES							
Process of non-reductive quenching of ozonides with base to yield disproportionated products, useful for making azelaic acid, nonanal,							
P2S-27-PROV	**Expired**	10/19/2018	62/748,161				
P2S-27-PCT	**Expired**	10/18/2019	PCT/US2019/057045	4/23/2020	WO 2020/082007		
P2S-27-CA	**Pending**	3/25/2021	CA 3,114,469				
P2S-27-EP	**Pending**	5/10/2021	EP 19873763.7	8/25/2021	3866968		
P2S-27-JP	**Pending**	4/16/2021	JP 2021-521268	1/14/2022	2022-505298		
P2S-27-US	**Pending**	4/19/2021	17/286,651	*12/2/2021*	US 2021-0371369 A1		

POLYETHER DERIVATIVES, USES, AND METHODS OF MAKING THE SAME							
CITROPOL polymers described by polydispersity index, and new CITROPOL polymer derivatives							
P2S-28-PROV	**Expired**	12/26/2019	62/953,850				
P2S-28B-PROV	**Expired**	6/24/2020	63/043,243				
P2S-28C-PROV	**Expired**	9/3/2020	63/074,197				
P2S-28D-PROV	**Expired**	10/15/2020	63/092,406				
P2S-28E-PROV	**Expired**	12/15/2020	63/125,841				
P2S-28-PCT	**Expired**	12/23/2020	PCT/US2020/066978	7/1/2021	WO 2021/133994		
P2S-28-USP	**Pending**	12/23/2020	17/133,520	7/29/2021	US 2021-0230364 A1		
P2S-28-AU	**Pending**	6/3/2022	2020413331				
P2S-28-CA	**Pending**	6/6/2022	3,160,914				
P2S-28-CN	**Pending**	6/24/2022	202080090259.3				
P2S-28-EP	**Pending**	6/17/2022	20845332.4	11/2/2022	4081575		
P2S-28-MX	**Pending**	6/24/2022	MX/a/2022/007981	8/12/2022	MX/a/2022/007981		

POLYETHER DERIVATIVES, USES, AND METHODS OF MAKING THE SAME							
Novel derivatives of CITROPOL polymers made by reacting with epoxides							
P2S-29-PROV	**Expired**	1/14/2020	62/961,035				
P2S-29B-PROV	**Expired**	6/24/2020	63/043,251				
P2S-29C-PROV	**Expired**	10/15/2020	63/092,407				
P2S-29D-PROV	**Expired**	12/15/2020	63/125,842				
P2S-29-PCT	**Expired**	1/14/2021	PCT/US2021/013486	7/22/2021	WO 2021/146461		
P2S-29-CN	**Pending**	7/13/2022	202180009168.7				
P2S-29-EP	**Pending**	6/17/2022	21873696.5	9/21/2022	EP4058503		
P2S-29-JP	**Pending**	7/13/2022	2022-542941				
P2S-29-US	**Pending**	7/14/2022	17/758,855				

POLYETHER DERIVATIVES, USES, AND METHODS OF MAKING THE SAME							
Novel derivatives of CITROPOL polymers made by reacting with cyclic anhydrides							
P2S-30-PROV	**Expired**	1/14/2020	62/961,041				
P2S-30B-PROV	**Expired**	6/24/2020	63/043,254				
P2S-30C-PROV	**Expired**	10/15/2020	63/092,409				
P2S-30D-PROV	**Expired**	12/15/2020	63/125,854				
P2S-30-PCT	**Expired**	1/14/2021	PCT/US2021/013470	7/22/2021	WO 2021/146448		
P2S-30-EP	**Pending**	7/17/2022	21741376.4	9/21/2022	EP4058489		
P2S-30-JP	**Pending**	7/13/2022	2022-542979				
P2S-30-US	**Pending**	7/14/2022	17/758,856				

COSMETIC COMPOSITIONS COMPRISING POLYETHER POLYMERS							
Cosmetic compositions comprising CITROPOL and related polymers							
P2S-31-PROV	**Expired**	3/5/2020	62/985,400				
P2S-31B-PROV	**Expired**	6/24/2020	63/043,255				
P2S-31C-PROV	**Expired**	10/15/2020	63/092,412				
P2S-31D-PROV	**Expired**	12/15/2020	63/125,859				
P2S-31-EP	**Pending**	9/27/2022	21765368.2				
P2S-31-MX	**Pending**	9/2/2022	MX/a/2022/010940				
P2S-31-PCT	**Expired**	2/25/2021	PCT/US2021/19692	9/10/2021	WO 2021/178217		
P2S-31-USP	**Pending**	2/25/2021	17/185,619				
P2S-31-CA	**Pending**	8/19/2022	3,168,719				

NEW METHODS FOR HYDRODEALKENYLATION
Hydrodealkenylation of alkenes, esp. at isopropenyl or vinyl groups, using ozonolysis with Rongalite reduction

P2S-32-PROV	**Expired**	6/19/2020	63/041,411				
P2S-32-PCT	**Pending**	6/17/2021	PCT/US2021/37964	12/23/2021	WO 2021/257922	*National Stage Entry Due: 12/19/2022*	
P2S-32-US	**Pending**	4/27/2022	17/772,373				
P2S-32-EP	**Pending**	5/11/2022	21825266.6	8/17/2022	4041701		

METHOD FOR SYNTHESIS OF 2-METHYL-2-HYDROXYHEPTANE AND 2-METHYL 2-ALKOXYHEPTANES							
Two-step scheme for making 2-methyl-2-heptanol & analogs using Wolff-Kishner reduction then alkene hydration							
P2S-33-PROV	**Expired**	10/9/2020	63/041,411				
P2S-33-PCT	**Pending**	10/8/2021	PCT/US21/54278	4/14/2022	WO 2022/076892		
P2S-33-USP	**Abandoned**	10/10/2021	17/497,703				
P2S-33-EP	**Pending**	4/6/2022	21873696.5	7/13/2022	4025551		
P2S-33-US	**Pending**	6/27/2022	17/758,053				

OXIDATION OF CARBON-HYDROGEN BONDS OF POLYMERS USING OZONE							
Oxidative deconstruction of polymers, e.g., polystyrene, using ozone to form carboxylic acid and aldehyde products, and further derivs							
P2S-34-PROV	**Expired**	3/10/2021	63/159,274				
P2S-34-PCT	**Pending**	3/10/2022	PCT/US2022/019811	9/15/2022	WO 2022/192576		

OXIDATION OF CARBON-HYDROGEN BONDS USING OZONE							
Oxidation of C-H bonds of nonpolymeric hydrocarbons, e.g., terpenes, using ozone, to form various prods; refiling of P2S-26							
P2S-35-PROV	**Expired**	3/10/2021	63/159,275				
P2S-35-PCT	**Pending**	3/10/2022	PCT/US2022/019814	9/15/2022	WO 2022/192578		

ARYL TERPENE ESTERS							
UV-absorbing esters of aryl terpene alcohols for use as sunscreen ingredients							
P2S-36-PROV	**Expired**	5/17/2021	63/189,540				
P2S-36B-PROV	**Expired**	8/20/2021	63/235,566				
P2S-36-PCT	**Pending**	5/17/2022	PCT/US2022/029647				
P2S-36-USP	**Pending**	5/17/2022	17/746,615				

TERPENE ESTER SURFACTANTS							
Esters of terpene alcohols and polycarboxylic acids as surfactants, e.g., citric, gluconic, succinic, glutaric, ascorbic acids							
P2S-37-PROV	**Expired**	5/17/2021	63,189,543				
P2S-37-PCT	**Pending**	5/17/2022	PCT/US2022/029649				
P2S-37-USP	**Pending**	5/17/2022	17/746,624				

FATTY ACID TERPENE ALCOHOL ESTERS

Esters of terpene alcohols with fatty acids, e.g., lauric, palmitic, myristic acids							
P2S-38-PROV	**Expired**	5/17/2021	63/189,544				
P2S-38-PCT	**Pending**	5/17/2022	PCT/US2022/029650				
P2S-38-USP	**Pending**	5/17/2022	17/746,626				

TERPENOL ETHERS							
Ethers of terpene alcohols with fatty alcohols, e.g., lauryl, palmityl, myristyl alcohols							
P2S-39-PROV	**Expired**	5/17/2021	63/189,545				
P2S-39-PCT	**Pending**	5/17/2022	PCT/US2022/029651				
P2S-39-USP	**Pending**	5/17/2022	17/746,628				

TERPENE O-GLYCOSIDES							
Glycosidic ethers of terpene alcohols with mono and oligosaccharides, mainly as surfactants							
P2S-40-PROV	**Expired**	5/17/2021	63/189,546				
P2S-40-USP	**Pending**	5/17/2022	17/746,632	NON-PUBLICATION REQUEST			

CITRONELLOL ALKOXYLATE SURFACTANTS							
ethoxylated and propoxylated derivatives of citronellol and polycitronellol oligomers with different capping and linking groups							
P2S-41-PROV	**Pending**	7/15/2021	63/222,170				
P2S-41-PCT	**Pending**	7/15/2022	PCT/US2022/073805				
P2S-41-USP	**Pending**	7/15/2022	17/812,956				

Cannabis species as industrial chemical feedstocks							
products and methods from hydrogenation and derivatization of natural Cannabis compounds, such as CBG, CBD, CBGA, CBDA							
P2S-42-PROV	**Pending**	8/18/2021	63/234,292				
P2S-42-USP	**Pending**	8/18/2022	17/820,845				

Humulus species as industrial chemical feedstocks							
products and methods from hydrogenation and derivatization of natural Humulus (hpps) compounds, e.g., humulones, lupulones							
P2S-43-PROV	**Pending**	8/18/2021	63/234,294				
P2S-43-USP	**Pending**	8/18/2022	17/820,861				

Polycitronellol hair styling compositions for heat stabilization							
Citropol polymers for stabilzing hair against heat, e.g., in styling compostions for curling or straightening							
P2S-44-PROV	**To Be Filed**						
P2S-44-PCT	**To Be Filed**		Conversion Deadline			tbd	

Polycitronellol antimicrobial compositions							
Citropol polymers as preservatives, antimicrobial or bacteriostatic agents							
P2S-45-PROV	**To Be Filed**						
P2S-45-PCT	**To Be Filed**		Conversion Deadline			tbd	

POLYCITRONELLOL SILYL ETHERS							
Cleavable silyl ethers of polycitronellol oligomers for biodegradability							
P2S-46-PROV	**Pending**	10/19/2021	63/257,278				
P2S-46-PCT	**Pending**	10/19/2022	PCT/US22/78396				

FRAGRANCE AND FLAVOR COMPOSITIONS COMPRISING HYDROXYMELONAL FORMATE ESTER							
Ozonolysis method to form hydroxymelonal with 0.1-5% formate ester, compositions comprising same							
P2S-47-PROV	**Expired**	9/17/2021	63/245,418				
P2S-47-PCT	**Pending**	9/16/2022	PCT/US22/76615				

Methods for making 3,6-dimethylhexahydrobenzofuran-2-one							
Methods comprising epoxidation of isopulegol, rearrangement to aldehyde, oxidation, and ring closure; and by-product novel unsaturated							
P2S-48-PROV	**Pending**	12/23/2021	63/293,483				
P2S-48-PCT	**To Be Filed**		Conversion Deadline			December 23, 2022	

PIGMENT DISPERSIONS COMPRISING POLYETHER POLYMERS FOR COSMETICS							
Citropol-based pigment dispersions							
P2S-ACI-01-PROV	**Pending**	5/2/2022	63/337,568				
P2S-ACI-01-PCT	**To Be Filed**		Conversion Deadline			May 2, 2023	

IMPROVED SYNTHETIC METHODS FOR MAKING LACTONES							
New one-pot lactone synthesis method, e.g., using peroxide and acid							
P2S-50-PROV	**Pending**	5/19/2022	63/343,919				
P2S-50-PCT	**To Be Filed**		Conversion Deadline			May 19, 2023	

NEW METHOD FOR THE OZONOLYTIC SYNTHESIS OF HIGH-MELTING DICARBOXYLIC ACIDS AND OXO-ACIDS							
Method of making high-MP acids via ester ozonolysis, e.g., brassylic acid by ozonolysis of methyl erucate followed by hydrolysis							
P2S-51-PROV	**To Be Filed**						
P2S-51-PCT	**To Be Filed**		Conversion Deadline			tbd	

GLYOXAL AS A NOVEL REDUCTIVE REAGENT FOR OZONOLYSIS							
Methods of performing reductive ozonolysis using glyoxal as the reducing agent							
P2S-52-PROV	**To Be Filed**						
P2S-52-PCT	**To Be Filed**		Conversion Deadline			tbd	