PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4847213

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
JEFFREY ALAN LUCAS	02/26/2018
TOMMY MILES	02/26/2018
JAMES IGNOWSKI	02/23/2018
WILLIAM L. WILSON	02/28/2018
RICHARD H. HENZE	02/24/2018

RECEIVING PARTY DATA

Name:	Hewlett Packard Enterprise Development LP
Street Address:	11445 Compaq Center Drive West
City:	Houston
State/Country:	TEXAS
Postal Code:	77070

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15909337

CORRESPONDENCE DATA

Fax Number:

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: (970) 898-7472
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Correspondent Name: HEWLETT PACKARD ENTERPRISE
Address Line 1: 3404 E. HARMONY ROAD MS 79
Address Line 4: FORT COLLINS, COLORADO 80528

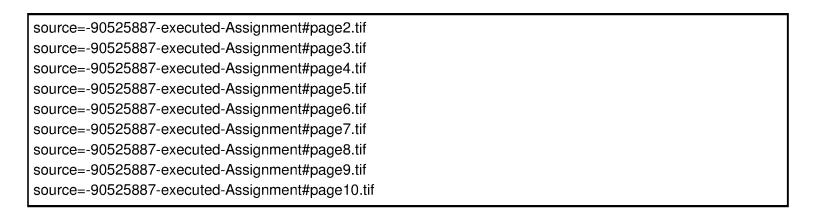
ATTORNEY DOCKET NUMBER:	90525887
NAME OF SUBMITTER:	DIANE V. LANE
SIGNATURE:	/Diane V. Lane/
DATE SIGNED:	03/01/2018

Total Attachments: 10

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First/Middle Name/Last Name

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RECORD ID:	90525887

ASSIGNMENT OF PATENT APPLICATION

I/We, the undersigned (each), for good and valuable consideration, the receipt of which is hereby acknowledged, and in furtherance of my/our obligations to Hewlett Packard Enterprise Development LP, a Texas Limited Partnership having its principal place of business in Houston, Texas, (hereinafter HPED), and to its subsidiaries and affiliates, agree to assign and transfer and hereby assign and transfer to HPED, its successors and assigns, the entire right, title and interest, including the right of priority. In, to and under an application for Patent entitled:

the right of priority, in, to and under an application for Patent entitled:	saigns, the entire right, title and interest, including
INTEGRATED CHARACTERIZATION VEHICLES FOR NON-VOLA	TILE MEMORY CELLS
Filing Date: March 1, 2018 Applicat	ion No.:
and the invention(s) and improvement(s) set forth therein, and any and divisionals, and renewals of and substitutes for said application for succountries thereto which may be granted thereon or therefore; and any a patent.	d all continuations, continuations-in-part (C-I-P's), aid Patent, and any and all other Patent of any
I/we additionally authorize HPED to file applications in my/our name by HPED, its successors, assigns, nominees or legal representatives, t Patent respectively may be granted, reissued or extended, as fully and enjoyed by me/us had this assignment, and transfer not been made;	o the full end of the term or terms for which said
AND I/we hereby covenant that I/we have full right to convey the enti- executed and will not execute any agreement in conflict herewith, and I/ time a request is made, and without undue delay, execute and deliver all perfect the title to said invention(s) or improvement(s), said application a nominees or legal representatives, and I/we agree to communicate to Hi said invention(s) or improvement(s), said application and said Patent, to papers, to execute all disclaimers and divisionals, continuations, C-I-F rightful oaths and declarations, and generally to de everything possible and legal representatives to obtain and enforce, for its or their own bene improvement(s) in any and all countries provided the expenses whit cooperation and assistance are paid by HPED;	we further covenant and agree that I/we will, each such papers as may be necessary or desirable to nd said Patent, to HPED, its successors, assigns, PED, or to its nominee, all known facts respecting testify in any legal proceedings, to sign all lawful "s, reissue and foreign applications, to make all to aid HPED, its successors, assigns, nominees fit, proper patent protection for said invention(s) or
AND I/we hereby authorize and request the official of any country applications as aforesaid, to issue to HPED, as assignee of the entire r invention(s) or improvement(s) which may be issued and granted or accordance with the terms of this assignment.	ight, title and interest, any and all Patent for said
I/we further authorize and direct the attorneys of record to inser application for Patent, now identified by the Record ID and title set forth a known to them.	t the filing date and application number of said bove, as soon as the same shall have been made
IN WITNESS WHEREOF, I/we hereunto set my/our hand(s) and seal(s):	
	Teb 26,2019
Lowentor's Signature	Date
Jeffrey Alan Lucas	
First/Middle Name/Last Name	
Inventor's Signature	Date
Tommy Miles	

PATENT APPLICATION

Fort Collins, Colorado 80528	RECORD ID:	90525887
ASSIGNMEN	IT OF PATENT APPLICATION (con	L.)
Inventor's Signature	Date	
James Ignowski		
First/Middle Name/Last Name		
Inventor's Signature		
	Date	
William Les Wilson		
First/Middle Name/Last Name		
Inventor's Signature	Date	
Richard H. Henze		
First/Middle Name/Last Name		
Inventor's Signature	Date	
First/Middle Name/Last Name		
Inventor's Signature	Date	
First/Middle Name/Last Name		
Inventor's Signature	Date	
First/Middle Name/Last Name		

Page 2 of

Hewlett Packard Enterprise
3404 E. Harmony Road
Mail Stop 79
Fort Collins, Colorado 80528

First/Middle Name/Last Name

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RECORD ID:	90525887

ASSIGNMENT OF PATENT APPLICATION

I/We, the undersigned (each), for good and valuable consideration, the receipt of which is hereby acknowledged, and in furtherance of my/our obligations to Hewlett Packard Enterprise Development LP, a Texas Limited Partnership having its

transfer and her	eby assign and trans	i, Texas, (hereinafter i fer to HPED, its succi application for Patent	essors and assigns, the	ianies and affiliales, agree to assign and entire right, title and interest, including
INTEGRATED	CHARACTERIZATI	ON VEHICLES FOR	NON-VOLATILE MEN	IORY CELLS
Filing Date:	March 1, 2018		Application No.:	15/909337
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by HPEO, its su Patent respective	iccessors, assigns, nely may be granted,	ominees or legal repr	esentatives, to the full of a study and entirely a	t in any country, to be held and enjoye and of the term or terms for which sai is the same would have been held an
executed and w time a request is perfect the title nominees or leg said invention(s papers, to exec rightful oaths ar and legal repres improvement(s)	ill not execute any ag s made, and without o to said invention(s) o sal representatives, as) or improvement(s), sute all disclaimers a sid declarations, and sentatives to obtain as	preement in conflict he andue delay, execute in improvement(s), said and I/we agree to come said application and a and divisionals, contin generally to do every and enforce, for its or the antires provided the a	rewith, and I/we further and deliver all such pap I application and said Pr nunicate to HPED, or to aid Patent, to teatify in uations, C-I-P's, reissu thing possible to aid HF teir own benefit, proper	therein assigned, and that I/we have no covenant and agree that I/we will, each are as may be necessary or desirable tratent, to HPED, its successors, assigns its nominee, all known facts respecting any legal proceedings, to sign all lawfulls and foreign applications, to make a PED, its successors, assigns, nominee patent protection for said invention(s) one incurred by me/us in lending successored.
applications as invention(s) or	aforesaid, to issue to	HPED, as assignee In may be issued an	of the entire right, title :	es whose duty it is to issue patents of and interest, any and all Patent for sail result of the application aforesaid, i
				date and application number of sai soon as the same shall have been mad
IN WITNESS	WHEREOF, I'we hereu	nto set my/our hand(s)	and seal(s):	
Inventor's Signati	ite .		Date	
Jeffrey Alan Lu	icas			
First/Middle Name	~ 1			426/18
Inventor's Signat. Tommy Miles	/		Date	

Page 1 of

PATENT APPLICATION

Fort Collins, Colorado 80528	RECORD ID:	90525887
ASSIGNME	ENT OF PATENT APPLICATION (cont.)	
inventor's Signature	Date	
James Ignowski		
First/Middle Name/Last Name		
Investory (C)		
Inventor's Signature	Date	
William Les Wilson		
First/Middle Name/Last Name		·
Inventor's Signature	Date	
Richard H. Henze		
First/Middle Name/Last Name		
Inventor's Signature	Date	
First/Middle Name/Last Name		
Inventor's Signature	Date	
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Inventor's Signature	Date	
First/Middle Name/Last Name		

Page 2 of

First/Middle Name/Last Name

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RECORD ID:	90525887
RECORD ID:	90525887

ASSIGNMENT OF PATENT APPLICATION

IWe, the undersigned (each), for good and valuable consideration, the receipt of which is hereby acknowledged, and in

principal place transfer and he	of business in Houston, Texas, (h	ereinafter HPED), and to D, its successors and as	ment LP, a Texas Limited Partnership having its its subsidiaries and affiliates, agree to assign and signs, the entire right, title and interest, including
INTEGRATED	CHARACTERIZATION VEHIC	LES FOR NON-VOLAT	TLE MEMORY CELLS
Filing Date: _	March 1, 2018	Applicati	on No.:15/909337
and the inventi divisionals, and	ion(s) and improvement(s) set for d renewals of and substitutes for	orth therein, and any and or said application for sa	l all continuations, continuations-in-part (C-I-P's) id Patent, and any and all other Patent of any eissues, or reexaminations, or extensions of said
by HPED, its s Patent respecti	successors, assigns, nominees of	r legal representatives, to or extended, as fully and	for Patent in any country, to be held and enjoyed the full end of the term or terms for which said entirely as the same would have been held and
executed and witime a request perfect the tille nominees or le said invention(spapers, to exerightful oaths a and legal repre improvement(s)	will not execute any agreement in is made, and without undue delay to said invention(s) or improvem gal representatives, and I/we agres) or improvement(s), said applicated all disclaimers and division and declarations, and generally to exentatives to obtain and enforce,	conflict herewith, and I/w y, execute and deliver all ent(s), said application ar see to communicate to HF ation and said Patent, to sals, continuations, C-I-P o do everything possible for its or their own benefi	re interest herein assigned, and that I/we have no ve further covenant and agree that I/we will, each such papers as may be necessary or desirable to nd said Patent, to HPED, its successors, assigns PED, or to its nominee, all known facts respecting testify in any legal proceedings, to sign all lawfu 's, reissue and foreign applications, to make at to aid HPED, its successors, assigns, nominees it, proper patent protection for said invention(s) or ch may be incurred by me/us in lending such
applications as invention(s) or	aforesaid, to issue to HPED, as	assignee of the entire ri	or countries whose duty it is to issue patents or ght, title and interest, any and all Patent for said or as a result of the application aforesaid, in
	Patent, now identified by the Reco		the filing date and application number of said bove, as soon as the same shall have been made
IN WITNES	S WHEREOF, I/we hereunto set my/o	our hand(s) and seal(s):	
Inventor's Signat	ture		Date
Jeffrey Alan Li	ucas		
First/Middle Nami	e/Last Name		
Inventor's Signat	ture		Date
Tommy Miles			

PATENT REEL: 045080 FRAME: 0521

Page 1 of

PATENT APPLICATION

Fort Collins, Colorado 80528	RECORD ID: 90525887
ASSIGNMENT OF	PATENT APPLICATION (cont.)
Janus S. Igus A. T. Inventor's Signature	2/23/18 Date
James Ignowski	
First/Middle Name/Last Name	
Inventor's Signature	Date
William Les Wilson	
First/Middle Name/Last Name	
Inventor's Signature	Date
Richard H, Henze	
First/Middle Name/Last Name	
Inventor's Signature	Date
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Inventor's Signature	Date
First/Middle Name/Last Name	······································
Inventor's Signature	Date
First/Middle Name/Last Name	

Page 2 of

Hewlett Packard 3404 E. Harmon					PATENT APPLICATION
Mail Stop 79 Fort Collins, Co	lorado 80528		RECO	ORD ID:	90525887
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furtherance of m principal place o transfer and her	ty/our obligat f business in eby assign a	tions to Hewlett Par Houston, Texas, (h and transfer to HPE	ckard Enterprise Develops ereinafter HPED), and to i	ment LP, a its subsidiar	which is hereby acknowledged, and in Texas Limited Partnership having its ries and affiliates, agree to assign and ntire right, title and interest, including
INTEGRATED	CHARACTE	RIZATION VEHIC	LES FOR NON-VOLAT	ILE MEMO	RY CELLS
Filing Date:	March 1	, 2018	Application	on No.:	15/909337
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IN WITNESS	WHEREOF, I/	we hereunto set my/	our hand(s) and seal(s):		
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Inventor's Signate	nt <i>e</i>			Date	
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First/Middle Name	/Last Name				
Inventor's Signati	ure			Date	

PATENT REEL: 045080 FRAME: 0523

Page 1 of

Tommy Miles

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First/Middle Name/Last Name

PATENT APPLICATION

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ASSIGNMENT	OF PATENT APPLICATION (cont.)
Inventor's Signature	Date
James Ignowski	
First/Middle Name/Last Name	
Josh Tuk	2/28/2018
Inventor's Signature	Date
William L. Wilson	
First/Middle Name/Last Name	
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Inventor's Signature	Date
Richard H. Henze	
First/Middle Name/Last Name	
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Inventor's Signature	Date
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Hewlett Packard Enterprise

Tommy Miles

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3404 E. Harmony Road Mail Stop 79			PATENT APPLICATION
Fort Collins, Colorado 80528		RECORD ID:	90525887
	ASSIGNMENT OF PA	TENT APPLICATION	ON
principal place of business in transfer and hereby assign a	ions to Hewlett Packard Enterpo Houston, Texas, (hereinafter HP	ise Development LP, : 'ED), and to its subsidia sors and assigns, the	which is hereby acknowledged, and in a Texas Limited Partnership having its aries and affiliates, agree to assign and entire right, title and interest, including
INTEGRATED CHARACTE	RIZATION VEHICLES FOR N	ON-VOLATILE MEM	ORY CELLS
Filing Date: March 1.	2018	Application No.:	15/909337
divisionals, and renewals of	and substitutes for said applic	and any and all continuation for said Patent	uations, continuations-in-part (C-I-P's), and any and all other Patent of any reexaminations, or extensions of said
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I/we further authorize a application for Patent, now ide known to them.	nd direct the attorneys of reco entified by the Record ID and title	rd to insert the filing set forth above, as so	date and application number of said on as the same shall have been made
IN WITNESS WHEREOF, I/W	e hereunto set my/our hand(s) and	l seal(s):	
Inventor's Signature			
Jeffrey Alan Lucas			
First/Middle Name/Last Name		***************************************	
Inventor's Signature			
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PATENT APPLICATION

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nventor's Signature		Date
ames Ignowski		
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ventor's Signature		Date
Villiam Les Wilson		
irst/Middle Name/Last Name		.
Ruhard H.	Herr	2/24/2018
lichard H. Henze		
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