

## PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
Group IV Semiconductor, Inc.	01/21/2013
RECEIVING PARTY DATA	
Name:	Kirsteen Mgmt. Group LLC
Street Address:	2711 Centerville Road, Suite 400
City:	Wilmington
State/Country:	DELAWARE
Postal Code:	19808
PROPERTY NUMBERS Total: 24	
Property Type	Number
Patent Number:	7923925
Patent Number:	7616272
Patent Number:	7839467
Patent Number:	7081664
Patent Number:	7122842
Patent Number:	7679102
Patent Number:	8093604
Patent Number:	7800117
Patent Number:	7888686
Patent Number:	8089080
Patent Number:	8198638
Patent Number:	7923288
Patent Number:	8232611
Application Number:	60989227
Application Number:	61084686

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Application Number:	60441413
Application Number:	60500686
Application Number:	60754185
Application Number:	60786730
Application Number:	60800422
Application Number:	61083751
Application Number:	60884266
Application Number:	60971373
Application Number:	61187424

#### CORRESPONDENCE DATA

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ATTORNEY DOCKET NUMBER:	5-51672
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NAME OF SUBMITTER:	Kevan L. Morgan
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Total Attachments: 11

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## ASSIGNMENT OF PATENT RIGHTS

For good and valuable consideration, the receipt of which is hereby acknowledged, Group IV Semiconductor, Inc., an Ontario corporation, with an office at 400 March Road, Ottawa, Canada K2K 3H4 (“**Assignor**”), does hereby sell, assign, transfer, and convey unto Kirsteen Mgmt. Group LLC, a Delaware limited liability company, with an address at 2711 Centerville Rd, Suite 400, Wilmington, DE 19808 (“**Assignee**”), or its designees, all right, title, and interest that exist today and may exist in the future in and to any and all of the following (collectively, the “**Patent Rights**”):

(a) the provisional patent applications, patent applications and patents listed in the table below (the “**Patents**”);

<u>Patent or Application No.</u>	<u>Country</u>	<u>Filing Date</u>	<u>Title of Patent and First Named Inventor</u>
7923925	US	11/19/2008	Light emitting device with a stopper layer structure  Thomas Macelwee
7616272	US	08/17/2007	Electroluminescent films for backlighting liquid crystal displays  Carla Miner
7839467	US	10/16/2009	Color tuneable electroluminescent devices  Carla Miner
7081664	US	01/22/2004	Doped semiconductor powder and preparation thereof  E. Steven Hill
7122842	US	07/22/2004	Solid state white light emitter and display using same  E. Steven Hill
7679102	US	12/21/2006	Carbon passivation in solid-state light emitters  George Chik
8093604	US	12/21/2006	Engineered structure for solid-state light emitters  George Chik
7800117	US	12/21/2006	Pixel structure for a solid state light emitting device

<u>Patent or Application No.</u>	<u>Country</u>	<u>Filing Date</u>	<u>Title of Patent and First Named Inventor</u>
			George Chik
CNZL200680050141.8	CN	12/22/2006	Pixel structure for a solid state light emitting device George Chik
CNZL200680050151.1	CN	12/22/2006	Engineered structure for solid-state light emitters George Chik
KR10-2008-7018271	KR	12/22/2006	Pixel structure for a solid state light emitting device George Chik
KR10-2008-7018286	KR	12/22/2006	Engineered structure for solid-state light emitters George Chik
IN01337/2008	IN	12/22/2006	Engineered structure for solid-state light emitters George Chik
IN01338/2008	IN	12/22/2006	Pixel structure for a solid state light emitting device George Chik
7888686	US	01/16/2008	Pixel structure for a solid state light emitting device George Chik
8089080	US	07/23/2009	Engineered structure for high brightness solid-state light emitters Iain Calder
8198638	US	07/14/2010	Light emitting device structure and process for fabrication thereof Thomas Macelwee
7923288	US	09/10/2008	Zinc oxide thin film electroluminescent devices Jean-Paul Noel
8232611	US	06/14/2010	High Quality Gate Dielectric For Semiconductor Devices and Method of Formation Thereof

<u>Patent or Application No.</u>	<u>Country</u>	<u>Filing Date</u>	<u>Title of Patent and First Named Inventor</u>
			Carla Miner

(b) all patents and patent applications (i) to which any of the Patents directly or indirectly claims priority, and/or (ii) for which any of the Patents directly or indirectly forms a basis for priority;

(c) all reissues, reexaminations, extensions, continuations, continuations in part, continuing prosecution applications, requests for continuing examinations, divisions, registrations of any item in any of the foregoing categories (a) and (b);

(d) all foreign patents, patent applications, and counterparts relating to any item in any of the foregoing categories (a) through (c), including, without limitation, certificates of invention, utility models, industrial design protection, design patent protection, and other governmental grants or issuances;

(e) all items in any of the foregoing in categories (b) through (d), whether or not expressly listed as Patents below and whether or not claims in any of the foregoing have been rejected, withdrawn, cancelled, or the like;

(f) inventions, invention disclosures, and discoveries described in any of the Patents and/or any item in the foregoing categories (b) through (e) that (i) are included in any claim in the Patents and/or any item in the foregoing categories (b) through (e), (ii) are subject matter capable of being reduced to a patent claim in a reissue or reexamination proceeding brought on any of the Patents and/or any item in the foregoing categories (b) through (e), and/or (iii) could have been included as a claim in any of the Patents and/or any item in the foregoing categories (b) through (e);

(g) all rights to apply in any or all countries of the world for patents, certificates of invention, utility models, industrial design protections, design patent protections, or other governmental grants or issuances of any type related to any item in any of the foregoing categories (a) through (f), including, without limitation, under the Paris Convention for the Protection of Industrial Property, the International Patent Cooperation Treaty, or any other convention, treaty, agreement, or understanding;

(h) all causes of action (whether known or unknown or whether currently pending, filed, or otherwise) and other enforcement rights under, or on account of, any of the Patents and/or any item in any of the foregoing categories (b) through (g), including, without limitation, all causes of action and other enforcement rights for

- (1) damages,
- (2) injunctive relief, and
- (3) any other remedies of any kind

for past, current, and future infringement; and

- (i) all rights to collect royalties and other payments under or on account of any of the Patents and/or any item in any of the foregoing categories (b) through (h).

For greater certainty, notwithstanding any other provision in this assignment, the Patents do not include any of Seller's inventions that were first conceived after July 30, 2010.

Assignor hereby authorizes the respective patent office or governmental agency in each jurisdiction to issue any and all patents, certificates of invention, utility models or other governmental grants or issuances that may be granted upon any of the Patent Rights in the name of Assignee, as the assignee to the entire interest therein.

Assignor will, at the reasonable request of Assignee, do all things necessary, proper, or advisable, including without limitation, the execution, acknowledgment, and recordation of specific assignments, oaths, declarations, and other documents on a country-by-country basis, to assist Assignee in obtaining, perfecting, sustaining, and/or enforcing the Patent Rights.

The terms and conditions of this Assignment of Patent Rights will inure to the benefit of Assignee, its successors, assigns, and other legal representatives and will be binding upon Assignor, its successors, assigns, and other legal representatives.

IN WITNESS WHEREOF this Assignment of Patent Rights is executed at Atlanta  
\_\_\_\_\_ on Jan 21, 2013.

**ASSIGNOR:**

**Group IV Semiconductor, Inc.**

By: \_\_\_\_\_  
Name: S. NADIR  
Title: CEO.  
(Signature MUST be attested)

**ATTESTATION OF SIGNATURE PURSUANT TO 28 U.S.C. § 1746**

The undersigned witnessed the signature of Stephen NABR to the above Assignment of Patent Rights on behalf of Group IV Semiconductor, Inc. and makes the following statements:

1. I am over the age of 18 and competent to testify as to the facts in this Attestation block if called upon to do so.
2. Stephen NABR is personally known to me (or proved to me on the basis of satisfactory evidence) and appeared before me on JAN 21/13 2013 to execute the above Assignment of Patent Rights on behalf of Group IV Semiconductor, Inc.
3. Stephen NABR subscribed to the above Assignment of Patent Rights on behalf of Group IV Semiconductor, Inc.

I declare under penalty of perjury under the laws of the United States of America that the statements made in the three (3) numbered paragraphs immediately above are true and correct.

EXECUTED on January 21, 2013

Lisa Bechamp  
Print Name: Lisa Bechamp

# **ASSIGNMENT OF RIGHTS IN CERTAIN ASSETS**

For good and valuable consideration, the receipt of which is hereby acknowledged, Group IV Semiconductor, Inc., an Ontario corporation, with an office at 400 March Road, Ottawa, Canada K2K 3H4 (“**Assignor**”), does hereby sell, assign, transfer, and convey unto Kirsteen Mgmt. Group LLC, a Delaware limited liability company, with an address at 2711 Centerville Rd, Suite 400, Wilmington, DE 19808 (“**Assignee**”), or its designees, the right, title, and interest in and to any and all of the following provisional patent applications, patent applications, patents, and other governmental grants or issuances of any kind (the “**Certain Assets**”):

<u>Patent or Application No.</u>	<u>Country</u>	<u>Filing Date</u>	<u>Title of Patent and First Named Inventor</u>
60/989227	US	11/20/2007	Electroluminescent device with a stopper layer  Thomas Macelwee
61/084686	US	07/30/2008	Buffer layer for electrodes in light emitting devices  Jean-Paul Noel
PCT/CA2008/002034	WO	11/20/2008	A light emitting device with a stopper layer structure  Thomas Macelwee
PCT/CA2008/001481	WO	08/15/2008	Electroluminescent films for backlighting liquid crystal displays  Carla Miner
TW097131371	TW	08/15/2008	Electroluminescent films for backlighting liquid crystal displays  Carla Miner
60/441413	US	01/22/2003	Preparation of type IV semiconductor nanocrystals doped with rare-earth ions and product thereof  E. Steven Hill
60/441485	US	01/22/2003	Applications of IV semiconductor nanocrystals doped with rare-earth ions  E. Steven Hill
60/450661	US	03/03/2003	Applications of IV semiconductor nanocrystals doped with rare-earth ions  E. Steven Hill
CA2513574	CA	01/22/2004	Doped semiconductor nanocrystal layers, doped semiconductor powders and



<b><u>Patent or Application No.</u></b>	<b><u>Country</u></b>	<b><u>Filing Date</u></b>	<b><u>Title of Patent and First Named Inventor</u></b>
			photonic devices employing such layers or powders  E. Steven Hill
CN200480002694.7	CN	01/22/2004	Unable to verify  Unable to verify
EP04704158.7	EP	01/22/2004	Rare earth doped group IV nanocrystal layers  E. Steven Hill
10/761338	US	01/22/2004	Broadband optical pump source for optical amplifiers, planar optical amplifiers, planar optical circuits and planar optical lasers fabricated using group IV semiconductor nanocrystals  E. Steven Hill
10/761408	US	01/22/2004	Light emitting diodes and planar optical lasers using IV semiconductor nanocrystals  E. Steven Hill
10/761409	US	01/22/2004	Doped semiconductor nanocrystal layers and preparation thereof  E. Steven Hill
IN03203/2005	IN	01/22/2004	Doped semiconductor nanocrystal layers, doped semiconductor powers and photonic devices employing such layers or powers  E. Steven Hill
JP2006-500439	JP	01/22/2004	Doped semiconductor nanocrystal layers, doped semiconductor powers and photonic devices employing such layers or powers  E. Steven Hill
KR10-2005-7013325	KR	01/22/2004	Doped semiconductor nanocrystal layers, doped semiconductor powders and photonic devices employing such layers or powders  E. Steven Hill
PCT/CA2004/000075	WO	01/22/2004	Doped semiconductor nanocrystal layers and

<b><u>Patent or Application No.</u></b>	<b><u>Country</u></b>	<b><u>Filing Date</u></b>	<b><u>Title of Patent and First Named Inventor</u></b>
			preparation thereof E. Steven Hill
PCT/CA2004/000076	WO	01/22/2004	Rare earth doped group IV nanocrystal layers E. Steven Hill
11/533036	US	09/19/2006	Doped semiconductor nanocrystal layers and preparation thereof E. Steven Hill
60/500686	US	09/08/2003	Solid state white light emitter and display using same E. Steven Hill
EP04737983.9	EP	07/22/2004	Solid state white light emitter and display using same E. Steven Hill
CN200480025794.1	CN	07/22/2004	Solid state white light emitter and display using same E. Steven Hill
CA2538276	CA	07/22/2004	Solid state white light emitter and display using same E. Steven Hill
PCT/CA2004/001059	WO	07/22/2004	Solid state white light emitter and display using same E. Steven Hill
IN00960/2006	IN	07/22/2004	Solid state white light emitter and display using same E. Steven Hill
KR10-2006-7004616	KR	07/22/2004	Solid state white light emitter and display using same E. Steven Hill
JP2006-525011	JP	07/22/2004	Solid state white light emitter and display using same E. Steven Hill
60/754185	US	12/28/2005	Semiconductor lighting George Chik
60/786730	US	03/29/2006	Composite layered film structure for light emitting devices George Chik

<u>Patent or Application No.</u>	<u>Country</u>	<u>Filing Date</u>	<u>Title of Patent and First Named Inventor</u>
60/800422	US	05/16/2006	Carbon doping as a means to passivate silicon nanocrystals in SRSO-SiO <sub>2</sub> engineered film structure for light emitting devices  George Chik
CA2635303	CA	12/22/2006	Engineered structure for solid-state light emitters  George Chik
CA2635307	CA	12/22/2006	Pixel structure for a solid state light emitting device  George Chik
EP06840558.8	EP	12/22/2006	Engineered structure for solid-state light emitters  George Chik
EP06840559.6	EP	12/22/2006	Pixel structure for a solid state light emitting device  George Chik
JP2008-547815	JP	12/22/2006	Engineered structure for solid-state light emitters  George Chik
PCT/CA2006/002132	WO	12/22/2006	Engineered structure for solid-state light emitters  George Chik
PCT/CA2006/002133	WO	12/22/2006	Pixel structure for a solid state light emitting device  George Chik
61/083751	US	07/25/2008	Solid-state light emitters using rare earths and aluminum  Iain Calder
60/884266	US	01/10/2007	Light emitting devices with ZnO or a ZnO alloy thin film structure  E. Steven Hill
60/971373	US	09/11/2007	Zinc oxide thin film electroluminescent devices  Jean-Paul Noel
11/971566	US	01/09/2008	Light emitting devices with a zinc oxide thin film structure  Brian Rioux

<u>Patent or Application No.</u>	<u>Country</u>	<u>Filing Date</u>	<u>Title of Patent and First Named Inventor</u>
PCT/CA2008/000020	WO	01/09/2008	Light emitting devices with a zinc oxide thin film structure  Brian Rioux
PCT/CA2008/001607	WO	09/11/2008	Zinc oxide thin film electroluminescent devices  Jean-Paul Noel
61/187424	US	06/16/2009	High Quality Gate Dielectric For Semiconductor Devices and Method fo Formation Thereof  Carla Miner
PCT/CA2010/000287	WO	03/01/2010	Deposition of Thin Film Dielectrics and Light Emitting Nano-Layer Structures  Jean-Paul Noel
60/610203	US	09/16/2004	Thin film alternating current solid-state lighting  Steven E. Hill
11/229220	US	09/16/2005	Thin film alternating current solid-state lighting  Steven E. Hill
PCT/CA2005/001418	WO	09/16/2005	Thin film alternating current solid-state lighting  Steven E. Hill
61/083673	US	07/25/2008	Injectory Layer Structure for a light emitting device  Unable to Verify
61/084427	US	07/29/2008	Tapered edge profile for use in light emitting structures  Unable to Verify
61/084666	US	07/30/2008	Injector layer for electrodes of light emitting device  Unable to Verify
61/085028	US	07/31/2008	Electroplate process for light emitting devices  Unable to Verify
61/030349	US	02/21/2008	Visible emitters using rare earth doped oxide phosphors  Unable to Verify
61/030687	US	02/22/2008	Electroluminescent devices with

<u>Patent or Application No.</u>	<u>Country</u>	<u>Filing Date</u>	<u>Title of Patent and First Named Inventor</u>
			vertical phosphors Unable to Verify
61/085053	US	07/31/2008	Zinc oxide based light emitting devices fabricated using hydrogen plasma treatment Unable to Verify
61/222697	US	07/02/2009	Top side reflector Unable to Verify
61/225938	US	07/16/2009	Electroplate process for light emitting devices Unable to Verify
61/224099	US	07/09/2009	Injector layer structure for a light emitting device Unable to Verify
61/227825	US	07/23/2009	Injector layer for electrode of light emitting device Unable to Verify
JP2008-547816	JP	12/22/2006	Pixel structure for a solid state light emitting device George Chik

Assignor assigns to Assignee all rights to the inventions, invention disclosures, and discoveries in the assets listed above, together, with the rights, if any, to revive prosecution of claims under such assets and to sue or otherwise enforce any claims under such assets for past, present or future infringement.

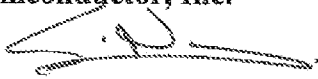
Assignor hereby authorizes the respective patent office or governmental agency in each jurisdiction to make available to Assignee all records regarding the Certain Assets.

The terms and conditions of this Assignment of Rights in Certain Assets will inure to the benefit of Assignee, its successors, assigns, and other legal representatives and will be binding upon Assignor, its successors, assigns, and other legal representatives.

DATED this 21<sup>st</sup> day of January 2013.

**ASSIGNOR:**

**Group IV Semiconductor, Inc.**

By:   
Name: S. NAOR  
Title: C.E.O.