

PATENT ASSIGNMENT COVER SHEET

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CONVEYING PARTY DATA		
	Name	Execution Date
	NITRONIX CORPORATION	09/02/2010
RECEIVING PARTY DATA		
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	Property Type	Number
	Application Number:	15240789
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DATE SIGNED:	11/29/2018	
Total Attachments: 7		
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PATENT

REEL: 047629 FRAME: 0123

ASSIGNMENT OF PATENTS

WHEREAS, Nitronex Corporation, a Delaware corporation, with offices at 2305 Presidential Drive, Durham, NC 27703 ("ASSIGNOR"), is the sole owner of all right, title and interest in and to certain patents, patent applications, and/or registrations, as listed in Exhibit A attached hereto and incorporated herein by this reference ("PATENTS"); and

WHEREAS, International Rectifier Corporation, a Delaware corporation with its principal office at 101 N Sepulveda Blvd., El Segundo, CA 90245 ("ASSIGNEE"), desires to acquire all of the right, title and interest in, to and under the PATENTS in accordance with the terms of that certain Intellectual Property Purchase Agreement dated July 30, 2010 (the "Transfer Agreement");

NOW, THEREFORE, for good and valuable consideration paid by ASSIGNEE to ASSIGNOR, the receipt and sufficiency of which is hereby acknowledged, ASSIGNOR does hereby sell, assign, transfer and convey unto ASSIGNEE all right, title and interest in and to the PATENTS, including: all divisions, continuations, continuations-in-part, reexaminations, substitutions, reissues, extensions and renewals of the applications and registrations for the PATENTS, and all foreign patents and patent applications related thereto (and the right to apply for any of the foregoing); all rights to causes of action and remedies related thereto (including, without limitation, the right to sue for past, present or future infringement, misappropriation or violation of rights related to the foregoing); and any and all other rights and interests arising out of, in connection with or in relation to the foregoing. In the event of any conflict or inconsistency between the terms of the Transfer Agreement and the terms hereof, the terms of the Transfer Agreement shall govern.

And, ASSIGNOR, hereby authorizes and requests the Commissioner of Patents and Trademarks to issue any and all Letters Patents of the United States on said inventions to ASSIGNEE as assignee of the entire interest.

IN WITNESS WHEREOF, ASSIGNOR has caused this Assignment to be duly executed by an authorized officer on this 2 day of SEPTEMBER 2010.







By: Charles E. Shalvoy

Name: CHARLES E. SHALVOY

Title: PRESIDENT & CEO

EXHIBIT A

PATENTS

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1. U.S. **Patent** No. 6,649,287, issued November 18, 2003 from U.S. Patent Application Serial No. 09/736,972, filed December 14, 2000, entitled "Gallium Nitride Materials and Methods"
 -  2. U.S. **Patent** No. 6,617,060, issued September 9, 2003 from U.S. Patent Application Serial No. 10/188,814, filed July 02, 2002, entitled "Gallium Nitride Materials and Methods" which is a continuation of U.S. Patent Application Serial No. 09/736,972, filed December 14, 2000
 -  3. U.S. Patent **Application** Serial No. 12/343,616, filed December 24, 2008, entitled "Gallium Nitride Materials and Methods" which is a divisional of U.S. Patent Application Serial No. 10/675,798, filed September 30, 2003, which is a continuation of U.S. Patent Application Serial No. 09/736,972, filed December 14, 2000
 4. European **Patent** No. 1343927, granted April 25, 2007, from European Patent Application Serial No. 01991120.5, filed December 14, 2001, entitled "Gallium Nitride Materials and Methods", a national of PCT Application Serial No. PCT/US01/48426, claiming priority to U.S. Patent Application Serial No. 09/736,972, filed December 14, 2000
 5. Taiwanese **Patent** No. I257142, issued June 21, 2006, based on Taiwanese Application Serial No. 90130606, filed December 11, 2001, entitled "Gallium Nitride Materials and Methods", claiming priority to U.S. Patent Application Serial No. 09/736,972, filed December 14, 2000
 -  6. U.S. **Patent** No. 6,611,002, issued August 26, 2003 from U.S. Patent Application Serial No. 09/792,414, filed February 23, 2001, entitled "Gallium Nitride Material Devices and Methods Including Backside Vias" 
 7. European Patent **Application** Serial No. 02721099.6, filed February 23, 2002, entitled "Gallium Nitride Material Devices and Methods Including Backside Vias", a national of PCT Application Serial No. PCT/US02/05182, claiming priority to U.S. Patent Application Serial No. 09/792,414, February 23, 2001
 8. Japanese Patent **Application** Serial No. 2002-568431, filed February 23, 2002, entitled "Gallium Nitride Material Devices and Methods Including Backside Vias", a national of PCT Application Serial No. PCT/US02/05182, claiming priority to U.S. Patent Application Serial No. 09/792,414, February 23, 2001
 9. Taiwanese **Patent** No. 178213, filed December 11, 2001, entitled "Gallium Nitride Material Devices and Methods Including Backside Vias" claiming priority to U.S. Patent Application Serial No. 09/792,414, February 23, 2001

- 10. U.S. **Patent** No. 7,233,028, which issued June 19, 2007 from U.S. Patent Application Serial No. 10/650,122, filed August 25, 2003, entitled "Gallium Nitride Material Devices and Methods Including Backside Vias" which is a continuation-in-part of U.S. Patent Application 09/792,414, filed February 23, 2001 ←
- 11. U.S. **Patent** No. 6,956,250, which issued October 18, 2005 from Application Serial No. 09/792,409, filed February 23, 2001, entitled "Gallium Nitride Materials Including Thermally Conductive Regions" ←
12. European Patent **Application** Serial No. 02790164.6, filed February 23, 2002, entitled "Gallium Nitride Materials Including Thermally Conductive Regions", a national of PCT Application Serial No. PCT/US02/05460, claiming priority to U.S. Patent Application Serial No. 09/792,409, February 23, 2001
13. Japanese **Patent** No. 4311939, which issued May 22, 2009 from Japanese Patent Application Serial No. 2002-568402, filed February 23, 2002, entitled "Gallium Nitride Materials Including Thermally Conductive Regions", a national of PCT Application Serial No. PCT/US02/05460, claiming priority to U.S. Patent Application Serial No. 09/792,409, February 23, 2001
14. Taiwanese **Patent** No. 178128, filed February 23, 2002, entitled "Gallium Nitride Materials Including Thermally Conductive Regions" claiming priority to U.S. Patent Application Serial No. 09/792,409, February 23, 2001
- 15. U.S. **Patent** No. 7,135,720, which issued on November 14, 2006 from U.S. Patent Application Serial No. 10/913,297, filed August 5, 2004, entitled "Gallium Nitride Material Transistors and Methods Associated With the Same" which claims priority to U.S. Provisional Patent Application Serial No. 60/493,039, filed August 5, 2003 ←
- 16. U.S. **Patent** No. 7,352,016 which issued on April 1, 2008 from U.S. Patent Application Serial No. 11/598,551, filed November 13, 2006, entitled "Gallium Nitride Material Transistors and Methods Associated With the Same" which is a continuation of U.S. Patent Application Serial No. 10/913,297, filed August 5, 2004, which claims priority to U.S. Provisional Patent Application Serial No. 60/493,039, filed August 5, 2003 ←
- 17. U.S. **Patent** No. 7,569,871, which issued on August 4, 2009 from U.S. Patent Application Serial No. 12/059,182, filed March 31, 2008, entitled "Gallium Nitride Material Transistors and Methods Associated With the Same" which is a continuation of U.S. Patent Application Serial No. 11/598,551, filed November 13, 2006, which is a continuation of U.S. Patent Application Serial No. 10/913,297, filed August 5, 2004, which claims priority to U.S. Provisional Patent Application Serial No. 60/493,039, filed August 5, 2003 ←
- 18. U.S. Patent **Application** Serial No. 12/508,871, filed on July 24, 2009 entitled "Gallium Nitride Material Transistors and Methods Associated With the Same" which is a ←

continuation of U.S. Patent Application Serial No. 12/059,182, filed March 31, 2008, which is a continuation of U.S. Patent Application Serial No. 11/598,551, filed November 13, 2006, which is a continuation of U.S. Patent Application Serial No. 10/913,297, filed August 5, 2004, which claims priority to U.S. Provisional Patent Application Serial No. 60/493,039, filed August 5, 2003

- 19. U.S. **Patent** No. 7,071,498, which issued July 4, 2006 from U.S. Patent Application Serial No. 10/740,376, filed December 17, 2003, entitled "Gallium Nitride Material Devices Including an Electrode-Defining Layer and Methods of Forming The Same" ←
20. Korean Patent **Application** Serial No. 10-2006-7014242, filed December 16, 2004, entitled "Gallium Nitride Material Devices Including an Electrode-Defining Layer and Methods of Forming The Same", a national of International Patent Application Serial No. PCT/US2004/042260 which claims priority to U.S. Patent Application Serial No. 10/740,376, filed December 17, 2003
21. Japanese Patent **Application** Serial No. 2006-545431, filed December 16, 2004, entitled "Gallium Nitride Material Devices Including an Electrode-Defining Layer and Methods of Forming The Same", a national of International Patent Application Serial No. PCT/US2004/042260 which claims priority to U.S. Patent Application Serial No. 10/740,376, filed December 17, 2003
- 22. U.S. **Patent** No. 7,361,946 which issued on April 22, 2008 from U.S. Patent Application Serial No. 10/879,704, filed June 28, 2004, entitled "Semiconductor Device-Based Sensors and Methods Associated With the Same" ←
- 24. U.S. **Patent** No. 7,339,205 which issued March 4, 2008 from U.S. Patent Application Serial No. 10/879,703, filed June 28, 2004, entitled "Gallium Nitride Materials and Methods Associated With the Same" ←
- 25. U.S. Patent **Application** Serial No. 12/023,480, filed January 31, 2008, entitled "Gallium Nitride Materials and Methods Associated With the Same" which is a divisional of U.S. Patent Application Serial No. 10/879,703, filed June 28, 2004 ←
- 26. U.S. **Patent** No. 7,352,015 which issued March 1, 2008 from U.S. Patent Application Serial No. 11/096,505, filed April 1, 2005, entitled "Gallium Nitride Materials and Methods Associated With the Same" which is a continuation-in-part of U.S. Patent Application Serial No. 10/879,703, filed June 28, 2004 ←
- 27. U.S. Patent **Application** Serial No. 12/023,451, filed January 31, 2008, entitled "Gallium Nitride Materials and Methods Associated With the Same" which is a divisional of U.S. Patent Application Serial No. 11/096,505, filed April 1, 2005, entitled "Gallium Nitride Materials and Methods Associated With the Same" which is a continuation-in-part of U.S. Patent Application Serial No. 10/879,703, filed June 28, 2004 ←

28. European Patent **Application** Serial No. 05763560.9, filed June 24, 2005, entitled "Gallium Nitride Materials and Methods Associated With the Same", a national of International Patent Application Serial No. PCT/US2005/022488 which claims priority to U.S. Patent Application Serial No. 10/879,703, filed June 28, 2004
29. Japanese Patent **Application** Serial No. 2007-519306, filed June 24, 2005, entitled "Gallium Nitride Materials and Methods Associated With the Same", a national of International Patent Application Serial No. PCT/US2005/022488 which claims priority to U.S. Patent Application Serial No. 10/879,703, filed June 28, 2004
- 30. U.S. **Patent** No. 7,687,827 which issued March 30, 2010 from U.S. Patent Application Serial No. 10/886,506, filed July 7, 2004, entitled "III-Nitride Materials Including Low Dislocation Densities and Methods Associated With the Same" ←
- 31. U.S. Patent **Application** Serial No. 12/748,778, filed March 29, 2010, entitled "III-Nitride Materials Including Low Dislocation Densities and Methods Associated with the Same" is a continuation of 10/886,506, filed July 7, 2004. ←
32. European Patent **Application** Serial No. 05768527.3, filed July 6, 2005, "III-Nitride Materials Including Low Dislocation Densities and Methods Associated with the Same", a national of International Patent Application Serial No. PCT/US2005/023934 which claims priority to U.S. Patent Application Serial No. 10/886,506, filed July 7, 2004
33. Japanese Patent **Application** Serial No. 2007-520461, filed July 6, 2005, "III-Nitride Materials Including Low Dislocation Densities and Methods Associated with the Same", a national of International Patent Application Serial No. PCT/US2005/023934 which claims priority to U.S. Patent Application Serial No. 10/886,506, filed July 7, 2004
- 34. U.S. Patent **Application** Serial No. 11/261,942, filed October 28, 2005, entitled "Gallium Nitride Material-Based Monolithic Microwave Integrated Circuits" ←
35. European Patent **Application** Serial No. 05823281.1, filed October 28, 2005, entitled "Gallium Nitride Material-Based Monolithic Microwave Integrated Circuits", a national of International Patent Application Serial No. PCT/US2005/039579, which claims priority to U.S. Patent Application Serial No. 11/004,628, filed December 3, 2004
- 36. U.S. **Patent** No.: 7,247,889 which issued July 24, 2007 from U.S. Patent Application Serial No. 11/004,628, filed December 3, 2004, entitled "III-Nitride Material Structures Including Silicon Substrates" ←
37. European Patent **Application** Serial No. 05852894.4, filed December 5, 2005, entitled: "III-Nitride Material Structures Including Silicon Substrates", a national of International Patent Application Serial No. PCT/US2005/043810, which claims priority to U.S. Patent Application Serial No. 11/004,628, filed December 3, 2004

→ 38. U.S. **Patent** No. 7,365,374 which issued April 29, 2008 from U.S. Patent Application Serial No. 11/121,793, filed May 3, 2005, entitled "Gallium Nitride Material Structures Including Substrates and Methods Associated With the Same" ←

→ 39. U.S. Patent **Application** Serial No. 12/024,313, filed February 1, 2008, entitled "Gallium Nitride Material Structures Including Substrates and Methods Associated With the Same" which is a divisional of U.S. Patent Application Serial No. 11/121,793, filed May 3, 2005 ←

40. European Patent **Application** Serial No. 06799911.0, entitled "Gallium Nitride Material Structures Including Substrates and Methods Associated With the Same", a national of International Patent Application Serial No. US2006/017098, filed May 3, 2006, claiming priority to U.S. Patent Application Serial No. 11/004,628, filed December 3, 2004

→ 41. U.S. **Patent** No. 7,555,916 issued July 28, 2009 from U.S. Patent Application Serial No. 11/634,332, filed December 4, 2006, entitled "Gallium Nitride Material Structures Including Conductive Regions and Methods Associated with the Same" which claims priority to U.S. Provisional Patent Application Serial No. 60/741,609, filed December 2, 2005 ←

→ 42. U.S. Patent **Application** Serial No. 12/508,891, filed July 24, 2009, entitled "Gallium Nitride Material Structures Including Conductive Regions and Methods Associated with the Same" which is a continuation of U.S. Patent Application Serial No. 11/607,129, filed November 30, 2006 which claims priority to U.S. Provisional Patent Application Serial No. 60/741,608, filed December 2, 2005 ←

→ 43. U.S. Patent **Application** Serial No. 11/607,129, filed November 30, 2006, entitled "Gallium Nitride Material Devices and Associated Methods" which claims priority to U.S. Provisional Patent Application Serial No. 60/741,608, filed December 2, 2005 ←

44. European Patent **Application** Serial No. 06838558.2, filed November 30, 2006, entitled "Gallium Nitride Material Devices and Associated Methods", a national of International Patent Application Serial No. US2006/045662 which claims priority to U.S. Provisional Patent Application Serial No. 60/741,608, filed December 2, 2005

→ 45. U.S. Patent **Application** Serial No. 11/543,010, filed October 4, 2006, entitled "Gallium Nitride Material Transistors and Methods for Wideband Applications" which claims priority to U.S. Provisional Patent Application Serial No. 60/723,824, filed October 4, 2005 ←

46. Chinese Patent **Application** Serial No. 200680041266.4, entitled "Gallium Nitride Material Transistors and Methods for Wideband Applications", a national of International Patent Application Serial No. PCT/US2006/39133, filed October 4, 2006 which claims priority to U.S. Provisional Patent Application Serial No. 60/723,824, filed October 4, 2005

47. Korean Patent **Application** Serial No. 10-2008-7010737, entitled "Gallium Nitride Material Transistors and Methods for Wideband Applications", a national of International Patent Application Serial No. PCT/US2006/39133, filed October 4, 2006 which claims priority to U.S. Provisional Patent Application Serial No. 60/723,824, filed October 4, 2005

→ 48. U.S. Patent **Application** Serial No. 11/839,030, filed August 15, 2007, entitled "Gallium Nitride Material Devices and Thermal Designs Thereof" ←

→ 49. U.S. **Patent** No. 7,745,848 issued on June 29, 2010 from U.S. Patent Application Serial No. 11/839,040, filed August 15, 2007, entitled "Gallium Nitride Material Devices and Thermal Designs Thereof" ←

→ 50. U.S. Patent **Application** Serial No. 12/025,976, filed February 5, 2008, entitled "Gallium Nitride Material Devices Including Diamond Regions and Methods Associated With the Same" ←

→ 51. U.S. Patent **Application** Serial No. 12/132,985, filed June 4, 2008, entitled "Packaged Gallium Nitride Material Transistors and Related Methods" which claims priority to U.S. Provisional Patent Application Serial No. 60/933,276, filed June 4, 2007 ←

→ 52. U.S. Patent **Application** Serial No. 12/143,727, filed June 20, 2008, entitled "Gallium Nitride Material Processing and Related Device Structures" which claims priority to U.S. Provisional Patent Application Serial No. 61/048,940, filed April 29, 2008 ←

53. International Patent **Application** Serial No. PCT/US2009/002663, filed April 29, 2009, entitled "Gallium Nitride Material Processing and Related Device Structures" which claims priority to U.S. Provisional Patent Application Serial No. 61/048,940, filed April 29, 2008

→ 54. U.S. Patent **Application** Serial No. 12/110,816, filed April 28, 2008, entitled "Externally Configurable Integrated Circuits" ←