

## PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT																
NATURE OF CONVEYANCE:	ASSIGNMENT																
CONVEYING PARTY DATA																	
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Berardi Sensale-Rodriquez</td> <td>06/20/2012</td> </tr> <tr> <td>Huili (Grace) Xing</td> <td>06/20/2012</td> </tr> <tr> <td>Rusen Yan</td> <td>06/20/2012</td> </tr> <tr> <td>Michelle M. Kelly</td> <td>06/20/2012</td> </tr> <tr> <td>Tian Fang</td> <td>06/21/2012</td> </tr> <tr> <td>Debdeep Jena</td> <td>06/20/2012</td> </tr> <tr> <td>Lei Liu</td> <td>06/20/2012</td> </tr> </tbody> </table>		Name	Execution Date	Berardi Sensale-Rodriquez	06/20/2012	Huili (Grace) Xing	06/20/2012	Rusen Yan	06/20/2012	Michelle M. Kelly	06/20/2012	Tian Fang	06/21/2012	Debdeep Jena	06/20/2012	Lei Liu	06/20/2012
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<table border="1"> <tr> <td>Name:</td> <td>University of Notre Dame du Lac</td> </tr> <tr> <td>Street Address:</td> <td>511 Main Building</td> </tr> <tr> <td>City:</td> <td>Notre Dame</td> </tr> <tr> <td>State/Country:</td> <td>INDIANA</td> </tr> <tr> <td>Postal Code:</td> <td>46556</td> </tr> </table>		Name:	University of Notre Dame du Lac	Street Address:	511 Main Building	City:	Notre Dame	State/Country:	INDIANA	Postal Code:	46556						
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CORRESPONDENCE DATA																	
Fax Number:	(312)456-8435																
Phone:	3124568400																
Email:	chiipmail@gtlaw.com																
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.</i>																	
Correspondent Name:	Keith R. Jarosik																
Address Line 1:	77 W. Wacker Drive																
Address Line 2:	Greenberg Traurig, LLP - Suite 3100																
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ATTORNEY DOCKET NUMBER:	135404.018000
NAME OF SUBMITTER:	Keith R. Jarosik
<p>Total Attachments: 7</p> <p>source=Assignment13529934#page1.tif</p> <p>source=Assignment13529934#page2.tif</p> <p>source=Assignment13529934#page3.tif</p> <p>source=Assignment13529934#page4.tif</p> <p>source=Assignment13529934#page5.tif</p> <p>source=Assignment13529934#page6.tif</p> <p>source=Assignment13529934#page7.tif</p>	

## ASSIGNMENT

WHEREAS, **BERARDI SENSALERODRIGUEZ**, whose office address appears below (hereinafter referred to as ASSIGNOR), is an employee of the University of Notre Dame du Lac, with an address at 511 Main Building, Notre Dame, Indiana, 46556 (hereinafter referred to as ASSIGNEE) and has certain obligations to disclose and assign patentable new inventions to ASSIGNEE; and

WHEREAS, ASSIGNOR has invented a new and useful invention entitled: "**Terahertz Wave Amplitude Modulation**", Docket Number **UND 12-011** (hereinafter referred to as the INVENTION) for which a United States Patent Application title "**Method and Apparatus for Terahertz Wave Amplitude Modulation**" will be filed on or about **June 21, 2012**; and

WHEREAS, ASSIGNEE is desirous of acquiring the entire right, title and interest in and to the INVENTION in the United States and throughout the world; and

WHEREAS, ASSIGNOR is willing to assign his entire right, title, and interest in and to the INVENTION to ASSIGNEE;

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, I, ASSIGNOR, by these presents do sell, assign and transfer unto said ASSIGNEE, the entire right, title and interest in and to said INVENTION and applications throughout the United States of America, including any and all United States Letters Patent granted on any division, continuation, continuation-in-part and reissue of said application; and the entire right, title and interest in and to said INVENTION throughout the world, including the right to apply for patents and inventor certificates in respect thereof and to claim priority pursuant to rights accorded ASSIGNOR under the terms of the Paris International Convention and all other available international conventions and treaties; and the entire right, title and interest in and to any and all patents, patents of addition, utility models, patents of importation, revalidation patents and inventor certificates which may be granted throughout the world in respect of said INVENTION.

ALSO, ASSIGNOR hereby agrees to execute any documents that legally may be required in connection with the filing, prosecution and maintenance of said application or any other patent application(s) or inventor certificate(s) in the United States and in foreign countries for said INVENTION, including additional documents that may be required to affirm the rights of ASSIGNEE in and to said INVENTION, all without further consideration. ASSIGNOR also agrees, without further consideration and at ASSIGNEE's expense, to identify and communicate to ASSIGNEE at ASSIGNEE's request documents and information concerning the INVENTION that are within ASSIGNOR's possession or control, and to provide further assurances and testimony on behalf of ASSIGNEE that lawfully may be required of ASSIGNOR in respect of the prosecution, maintenance and defense of any patent application or patent encompassed within the terms of this instrument.

ASSIGNOR also agrees, without further consideration and at ASSIGNEE's expense, to transfer the right to sue for past infringement to ASSIGNEE and at ASSIGNEE's request documents and information concerning the enforcement of the right to sue within ASSIGNOR's possession or control, and to provide further assurances and testimony on behalf of ASSIGNEE that lawfully may be required of ASSIGNOR in respect of the right to sue of any patent encompassed within the terms of this instrument.

ASSIGNOR's obligations under this instrument shall extend to ASSIGNOR's heirs, executors, administrators and other legal representatives.

ASSIGNOR hereby authorizes and requests the Commissioner of Patents and Trademarks to issue any and all United States Letters Patent referred to above to ASSIGNEE of the entire right, title and interest in and to the same, for ASSIGNEE's sole use and behalf; and for the use and behalf of ASSIGNEE's legal representatives and successors, to the full end of the term for which such Letters Patent may be granted, as fully and entirely as the same would have been held by ASSIGNOR had this assignment and sale not been made.

**Berardi SensaleRodriguez**  
**228 Stinson-Remick**  
**Notre Dame, IN 46556**

  
\_\_\_\_\_  
Signature

\_\_\_\_\_  
June 20, 2012  
Date

*(Notarization preferred but not required)*

Before me personally appeared said \_\_\_\_\_ and acknowledges this instrument to be his (her) free act and deed this \_\_\_\_\_ day of \_\_\_\_\_, 2006.

\_\_\_\_\_  
Notary Public

## ASSIGNMENT

WHEREAS, **HUILI (GRACE) XING**, whose office address appears below (hereinafter referred to as ASSIGNOR), is an employee of the University of Notre Dame du Lac, with an address at 511 Main Building, Notre Dame, Indiana, 46556 (hereinafter referred to as ASSIGNEE) and has certain obligations to disclose and assign patentable new inventions to ASSIGNEE; and

WHEREAS, ASSIGNOR has invented a new and useful invention entitled: "**Terahertz Wave Amplitude Modulation**", Docket Number **UND 12-011** (hereinafter referred to as the INVENTION) for which a United States Patent Application title "**Method and Apparatus for Terahertz Wave Amplitude Modulation**" will be filed on or about **June 21, 2012**; and

WHEREAS, ASSIGNEE is desirous of acquiring the entire right, title and interest in and to the INVENTION in the United States and throughout the world; and

WHEREAS, ASSIGNOR is willing to assign his entire right, title, and interest in and to the INVENTION to ASSIGNEE;

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, I, ASSIGNOR, by these presents do sell, assign and transfer unto said ASSIGNEE, the entire right, title and interest in and to said INVENTION and applications throughout the United States of America, including any and all United States Letters Patent granted on any division, continuation, continuation-in-part and reissue of said application; and the entire right, title and interest in and to said INVENTION throughout the world, including the right to apply for patents and inventor certificates in respect thereof and to claim priority pursuant to rights accorded ASSIGNOR under the terms of the Paris International Convention and all other available international conventions and treaties; and the entire right, title and interest in and to any and all patents, patents of addition, utility models, patents of importation, revalidation patents and inventor certificates which may be granted throughout the world in respect of said INVENTION.

ALSO, ASSIGNOR hereby agrees to execute any documents that legally may be required in connection with the filing, prosecution and maintenance of said application or any other patent application(s) or inventor certificate(s) in the United States and in foreign countries for said INVENTION, including additional documents that may be required to affirm the rights of ASSIGNEE in and to said INVENTION, all without further consideration. ASSIGNOR also agrees, without further consideration and at ASSIGNEE's expense, to identify and communicate to ASSIGNEE at ASSIGNEE's request documents and information concerning the INVENTION that are within ASSIGNOR's possession or control, and to provide further assurances and testimony on behalf of ASSIGNEE that lawfully may be required of ASSIGNOR in respect of the prosecution, maintenance and defense of any patent application or patent encompassed within the terms of this instrument.

ASSIGNOR also agrees, without further consideration and at ASSIGNEE's expense, to transfer the right to sue for past infringement to ASSIGNEE and at ASSIGNEE's request documents and information concerning the enforcement of the right to sue within ASSIGNOR's possession or control, and to provide further assurances and testimony on behalf of ASSIGNEE that lawfully may be required of ASSIGNOR in respect of the right to sue of any patent encompassed within the terms of this instrument.

ASSIGNOR's obligations under this instrument shall extend to ASSIGNOR's heirs, executors, administrators and other legal representatives.

ASSIGNOR hereby authorizes and requests the Commissioner of Patents and Trademarks to issue any and all United States Letters Patent referred to above to ASSIGNEE of the entire right, title and interest in and to the same, for ASSIGNEE's sole use and behalf; and for the use and behalf of ASSIGNEE's legal representatives and successors, to the full end of the term for which such Letters Patent may be granted, as fully and entirely as the same would have been held by ASSIGNOR had this assignment and sale not been made.

**Huili (Grace) Xing**

**275 Fitzpatrick Hall  
Notre Dame, IN 46556**



Signature

June 20, 2012

Date

(Notarization preferred but not required)

Before me personally appeared said \_\_\_\_\_ and acknowledges this instrument to be his (her) free act and deed this \_\_\_\_\_ day of \_\_\_\_\_, 2006.

Notary Public

## ASSIGNMENT

WHEREAS, RUSEN YAN, whose office address appears below (hereinafter referred to as ASSIGNOR), is an employee of the University of Notre Dame du Lac, with an address at 511 Main Building, Notre Dame, Indiana, 46556 (hereinafter referred to as ASSIGNEE) and has certain obligations to disclose and assign patentable new inventions to ASSIGNEE; and

WHEREAS, ASSIGNOR has invented a new and useful invention entitled: "Terahertz Wave Amplitude Modulation", Docket Number UND 12-011 (hereinafter referred to as the INVENTION) for which a United States Patent Application title "Method and Apparatus for Terahertz Wave Amplitude Modulation" will be filed on or about June 21, 2012; and

WHEREAS, ASSIGNEE is desirous of acquiring the entire right, title and interest in and to the INVENTION in the United States and throughout the world; and

WHEREAS, ASSIGNOR is willing to assign his entire right, title, and interest in and to the INVENTION to ASSIGNEE;

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, I, ASSIGNOR, by these presents do sell, assign and transfer unto said ASSIGNEE, the entire right, title and interest in and to said INVENTION and applications throughout the United States of America, including any and all United States Letters Patent granted on any division, continuation, continuation-in-part and reissue of said application; and the entire right, title and interest in and to said INVENTION throughout the world, including the right to apply for patents and inventor certificates in respect thereof and to claim priority pursuant to rights accorded ASSIGNOR under the terms of the Paris International Convention and all other available international conventions and treaties; and the entire right, title and interest in and to any and all patents, patents of addition, utility models, patents of importation, revalidation patents and inventor certificates which may be granted throughout the world in respect of said INVENTION.

ALSO, ASSIGNOR hereby agrees to execute any documents that legally may be required in connection with the filing, prosecution and maintenance of said application or any other patent application(s) or inventor certificate(s) in the United States and in foreign countries for said INVENTION, including additional documents that may be required to affirm the rights of ASSIGNEE in and to said INVENTION, all without further consideration. ASSIGNOR also agrees, without further consideration and at ASSIGNEE's expense, to identify and communicate to ASSIGNEE at ASSIGNEE's request documents and information concerning the INVENTION that are within ASSIGNOR's possession or control, and to provide further assurances and testimony on behalf of ASSIGNEE that lawfully may be required of ASSIGNOR in respect of the prosecution, maintenance and defense of any patent application or patent encompassed within the terms of this instrument.

ASSIGNOR also agrees, without further consideration and at ASSIGNEE's expense, to transfer the right to sue for past infringement to ASSIGNEE and at ASSIGNEE's request documents and information concerning the enforcement of the right to sue within ASSIGNOR's possession or control, and to provide further assurances and testimony on behalf of ASSIGNEE that lawfully may be required of ASSIGNOR in respect of the right to sue of any patent encompassed within the terms of this instrument.

ASSIGNOR's obligations under this instrument shall extend to ASSIGNOR's heirs, executors, administrators and other legal representatives.

ASSIGNOR hereby authorizes and requests the Commissioner of Patents and Trademarks to issue any and all United States Letters Patent referred to above to ASSIGNEE of the entire right, title and interest in and to the same, for ASSIGNEE's sole use and behalf; and for the use and behalf of ASSIGNEE's legal representatives and successors, to the full end of the term for which such Letters Patent may be granted, as fully and entirely as the same would have been held by ASSIGNOR had this assignment and sale not been made.

Rusen Yan  
228 Stinson-Remick  
Notre Dame, IN 46556

  
\_\_\_\_\_  
Signature

  
\_\_\_\_\_  
Date

(Notarization preferred but not required)

Before me personally appeared said \_\_\_\_\_ and acknowledges this instrument to be his (her) free act and deed this \_\_\_\_\_ day of \_\_\_\_\_, 2006.

\_\_\_\_\_  
Notary Public

## ASSIGNMENT

WHEREAS, MICHELLE M. KELLY, whose office address appears below (hereinafter referred to as Assignor), is an employee of the University of Notre Dame de Lae, with an address at 511 Main Building, Notre Dame, Indiana, 46556 (hereinafter referred to as Assignee) and has certain obligations to disclose and assign patentable new inventions to Assignee; and

WHEREAS, Assignor has invented a new and useful invention entitled: "Terahertz Wave Amplitude Modulation" (Inventor Number UND 12-011) (hereinafter referred to as the Invention) for which a United States Patent Application title "Method and Apparatus for Terahertz Wave Amplitude Modulation" will be filed on or about June 21, 2012; and

WHEREAS, Assignee is desirous of acquiring the entire right, title and interest in and to the Invention in the United States and throughout the world; and

WHEREAS, Assignor is willing to assign the entire right, title, and interest in and to the Invention to Assignee;

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, I, Assignor, by these presents do sell, assign and transfer unto said Assignee, the entire right, title and interest in and to said Invention and applications throughout the United States of America, including any and all United States Letters Patent granted on any division, continuation, continuation-in-part and reissue of said application; and the entire right, title and interest in and to said Inventions throughout the world, including the right to apply for patents and inventor certificates in respect thereof and to claim priority pursuant to rights accorded Assignor under the terms of the Paris International Convention and all other available international conventions and treaties; and the entire right, title and interest in and to any and all patents, patents of addition, utility models, patents of importation, revalidation patents and inventor certificates which may be granted throughout the world in respect of said Invention.

ALSO, Assignor hereby agrees to execute any documents that legally may be required in connection with the filing, prosecution and maintenance of said application or any other patent application(s) or inventor certificate(s) in the United States and in foreign countries for said Invention, including additional documents that may be required to affirm the rights of Assignor in and to said Invention, all without further consideration. Assignor also agrees, without further consideration and at Assignor's expense, to identify and communicate to Assignee at Assignor's request documents and information concerning the Invention that are within Assignor's possession or control, and to provide further assurances and testimony on behalf of Assignor that lawfully may be required of Assignor in respect of the prosecution, maintenance and defense of any patent application or patent encompassed within the terms of this instrument.

Assignor also agrees, without further consideration and at Assignor's expense, to transfer the right to sue for past infringement to Assignee and at Assignor's request documents and information concerning the enforcement of the right to sue within Assignor's possession or control, and to provide further assurances and testimony on behalf of Assignor that lawfully may be required of Assignor in respect of the right to sue of any patent encompassed within the terms of this instrument.

Assignor's obligations under this instrument shall extend to Assignor's heirs, executors, administrators and other legal representatives.

Assignor hereby authorizes and requests the Commissioner of Patents and Trademarks to issue any and all United States Letters Patent referred to above to Assignor of the entire right, title and interest in and to the same, for Assignor's sole use and benefit, and for the use and benefit of Assignor's legal representatives and successors, to the full end of the term for which such Letters Patent may be granted, as fully and entirely as the same would have been held by Assignor had this assignment and sale not been made.

Michelle M. Kelly  
210 B Cushing Hall  
Notre Dame, IN 46556

  
Signature

6/20/12  
Date

*Notarizing practice not required*

Before me personally appeared said \_\_\_\_\_  
and filed this \_\_\_\_\_ day of \_\_\_\_\_, 2006.

and acknowledge this instrument to be his (her) free act

Notary Public

## ASSIGNMENT

WHEREAS, TIAN FANG, whose office address appears below (hereinafter referred to as ASSIGNOR), is an employee of the University of Notre Dame du Lac, with an address at 511 Main Building, Notre Dame, Indiana, 46556 (hereinafter referred to as ASSIGNEE) and has certain obligations to disclose and assign patentable new inventions to ASSIGNEE; and

WHEREAS, ASSIGNOR has invented a new and useful invention entitled: "Terahertz Wave Amplitude Modulation", Docket Number UND 12-011 (hereinafter referred to as the INVENTION) for which a United States Patent Application title "Method and Apparatus for Terahertz Wave Amplitude Modulation" will be filed on or about June 21, 2012; and

WHEREAS, ASSIGNEE is desirous of acquiring the entire right, title and interest in and to the INVENTION in the United States and throughout the world; and

WHEREAS, ASSIGNOR is willing to assign his entire right, title, and interest in and to the INVENTION to ASSIGNEE;

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, I, ASSIGNOR, by these presents do sell, assign and transfer unto said ASSIGNEE, the entire right, title and interest in and to said INVENTION and applications throughout the United States of America, including any and all United States Letters Patent granted on any division, continuation, continuation-in-part and reissue of said application; and the entire right, title and interest in and to said INVENTION throughout the world, including the right to apply for patents and inventor certificates in respect thereof and to claim priority pursuant to rights accorded ASSIGNOR under the terms of the Paris International Convention and all other available international conventions and treaties; and the entire right, title and interest in and to any and all patents, patents of addition, utility models, patents of importation, revalidation patents and inventor certificates which may be granted throughout the world in respect of said INVENTION.

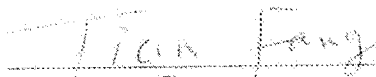
ALSO, ASSIGNOR hereby agrees to execute any documents that legally may be required in connection with the filing, prosecution and maintenance of said application or any other patent application(s) or inventor certificate(s) in the United States and in foreign countries for said INVENTION, including additional documents that may be required to affirm the rights of ASSIGNEE in and to said INVENTION, all without further consideration. ASSIGNOR also agrees, without further consideration and at ASSIGNEE's expense, to identify and communicate to ASSIGNEE at ASSIGNEE's request documents and information concerning the INVENTION that are within ASSIGNEE's possession or control, and to provide further assurances and testimony on behalf of ASSIGNEE that lawfully may be required of ASSIGNOR in respect of the prosecution, maintenance and defense of any patent application or patent encompassed within the terms of this instrument.

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Tian Fang  
131 Stinson-Remick  
Notre Dame, IN 46556

  
\_\_\_\_\_  
Signature  
06/21/2012  
\_\_\_\_\_  
Date

(Notarization preferred but not required)

Before me personally appeared said \_\_\_\_\_ and acknowledges this instrument to be his (her) free act and deed this \_\_\_\_\_ day of \_\_\_\_\_, 2006.

\_\_\_\_\_  
Notary Public

## ASSIGNMENT

WHEREAS, **DEBDEEP JENA**, whose office address appears below (hereinafter referred to as ASSIGNOR), is an employee of the University of Notre Dame du Lac, with an address at 511 Main Building, Notre Dame, Indiana, 46556 (hereinafter referred to as ASSIGNEE) and has certain obligations to disclose and assign patentable new inventions to ASSIGNEE; and

WHEREAS, ASSIGNOR has invented a new and useful invention entitled: "**Terahertz Wave Amplitude Modulation**", Docket Number **UND 12-011** (hereinafter referred to as the INVENTION) for which a United States Patent Application title "**Method and Apparatus for Terahertz Wave Amplitude Modulation**" will be filed on or about **June 21, 2012**; and

WHEREAS, ASSIGNEE is desirous of acquiring the entire right, title and interest in and to the INVENTION in the United States and throughout the world; and

WHEREAS, ASSIGNOR is willing to assign his entire right, title, and interest in and to the INVENTION to ASSIGNEE;

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, I, ASSIGNOR, by these presents do sell, assign and transfer unto said ASSIGNEE, the entire right, title and interest in and to said INVENTION and applications throughout the United States of America, including any and all United States Letters Patent granted on any division, continuation, continuation-in-part and reissue of said application; and the entire right, title and interest in and to said INVENTION throughout the world, including the right to apply for patents and inventor certificates in respect thereof and to claim priority pursuant to rights accorded ASSIGNOR under the terms of the Paris International Convention and all other available international conventions and treaties; and the entire right, title and interest in and to any and all patents, patents of addition, utility models, patents of importation, revalidation patents and inventor certificates which may be granted throughout the world in respect of said INVENTION.

ALSO, ASSIGNOR hereby agrees to execute any documents that legally may be required in connection with the filing, prosecution and maintenance of said application or any other patent application(s) or inventor certificate(s) in the United States and in foreign countries for said INVENTION, including additional documents that may be required to affirm the rights of ASSIGNEE in and to said INVENTION, all without further consideration. ASSIGNOR also agrees, without further consideration and at ASSIGNEE'S expense, to identify and communicate to ASSIGNEE at ASSIGNEE'S request documents and information concerning the INVENTION that are within ASSIGNOR'S possession or control, and to provide further assurances and testimony on behalf of ASSIGNEE that lawfully may be required of ASSIGNOR in respect of the prosecution, maintenance and defense of any patent application or patent encompassed within the terms of this instrument.

ASSIGNOR also agrees, without further consideration and at ASSIGNEE'S expense, to transfer the right to sue for past infringement to ASSIGNEE and at ASSIGNEE'S request documents and information concerning the enforcement of the right to sue within ASSIGNOR'S possession or control, and to provide further assurances and testimony on behalf of ASSIGNEE that lawfully may be required of ASSIGNOR in respect of the right to sue of any patent encompassed within the terms of this instrument.

ASSIGNOR'S obligations under this instrument shall extend to ASSIGNOR'S heirs, executors, administrators and other legal representatives.

ASSIGNOR hereby authorizes and requests the Commissioner of Patents and Trademarks to issue any and all United States Letters Patent referred to above to ASSIGNEE of the entire right, title and interest in and to the same, for ASSIGNEE'S sole use and behalf; and for the use and behalf of ASSIGNEE'S legal representatives and successors, to the full end of the term for which such Letters Patent may be granted, as fully and entirely as the same would have been held by ASSIGNOR had this assignment and sale not been made.

**Debdeep Jena**  
**271 Fitzpatrick Hall**  
**Notre Dame, IN 46556**



\_\_\_\_\_  
Signature

\_\_\_\_\_  
June 20, 2012  
Date

*(Notarization preferred but not required)*

Before me personally appeared said \_\_\_\_\_ and acknowledges this instrument to be his (her) free act and deed this \_\_\_\_\_ day of \_\_\_\_\_, 2006.

\_\_\_\_\_  
Notary Public



## ASSIGNMENT

WHEREAS, LEI LIU, whose office address appears below (hereinafter referred to as ASSIGNOR), is an employee of the University of Notre Dame du Lac, with an address at 511 Main Building, Notre Dame, Indiana, 46556 (hereinafter referred to as ASSIGNEE) and has certain obligations to disclose and assign patentable new inventions to ASSIGNEE; and

WHEREAS, ASSIGNOR has invented a new and useful invention entitled: "Terahertz Wave Amplitude Modulation", Docket Number UND 12-011 (hereinafter referred to as the INVENTION) for which a United States Patent Application title "Method and Apparatus for Terahertz Wave Amplitude Modulation" will be filed on or about June 21, 2012; and

WHEREAS, ASSIGNEE is desirous of acquiring the entire right, title and interest in and to the INVENTION in the United States and throughout the world; and

WHEREAS, ASSIGNOR is willing to assign his entire right, title, and interest in and to the INVENTION to ASSIGNEE;

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, I, ASSIGNOR, by these presents do sell, assign and transfer unto said ASSIGNEE, the entire right, title and interest in and to said INVENTION and applications throughout the United States of America, including any and all United States Letters Patent granted on any division, continuation, continuation-in-part and reissue of said application; and the entire right, title and interest in and to said INVENTION throughout the world, including the right to apply for patents and inventor certificates in respect thereof and to claim priority pursuant to rights accorded ASSIGNOR under the terms of the Paris International Convention and all other available international conventions and treaties; and the entire right, title and interest in and to any and all patents, patents of addition, utility models, patents of importation, revalidation patents and inventor certificates which may be granted throughout the world in respect of said INVENTION.

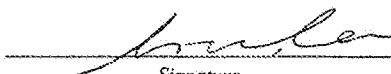
ALSO, ASSIGNOR hereby agrees to execute any documents that legally may be required in connection with the filing, prosecution and maintenance of said application or any other patent application(s) or inventor certificate(s) in the United States and in foreign countries for said INVENTION, including additional documents that may be required to affirm the rights of ASSIGNEE in and to said INVENTION, all without further consideration. ASSIGNOR also agrees, without further consideration and at ASSIGNEE's expense, to identify and communicate to ASSIGNEE at ASSIGNEE's request documents and information concerning the INVENTION that are within ASSIGNOR's possession or control, and to provide further assurances and testimony on behalf of ASSIGNEE that lawfully may be required of ASSIGNOR in respect of the prosecution, maintenance and defense of any patent application or patent encompassed within the terms of this instrument.

ASSIGNOR also agrees, without further consideration and at ASSIGNEE's expense, to transfer the right to sue for past infringement to ASSIGNEE and at ASSIGNEE's request documents and information concerning the enforcement of the right to sue within ASSIGNOR's possession or control, and to provide further assurances and testimony on behalf of ASSIGNEE that lawfully may be required of ASSIGNOR in respect of the right to sue of any patent encompassed within the terms of this instrument.

ASSIGNOR's obligations under this instrument shall extend to ASSIGNOR's heirs, executors, administrators and other legal representatives.

ASSIGNOR hereby authorizes and requests the Commissioner of Patents and Trademarks to issue any and all United States Letters Patent referred to above to ASSIGNEE of the entire right, title and interest in and to the same, for ASSIGNEE's sole use and behalf; and for the use and behalf of ASSIGNEE's legal representatives and successors, to the full end of the term for which such Letters Patent may be granted, as fully and entirely as the same would have been held by ASSIGNOR had this assignment and sale not been made.

Lei Liu  
105A Fitzpatrick Hall  
Notre Dame, IN 46556

  
\_\_\_\_\_  
Signature  
06/20/12  
\_\_\_\_\_  
Date

(Notarization preferred but not required)

Before me personally appeared said \_\_\_\_\_ and acknowledges this instrument to be his (her) free act and deed this \_\_\_\_\_ day of \_\_\_\_\_, 2006.

\_\_\_\_\_  
Notary Public