

**PATENT ASSIGNMENT**

Electronic Version v1.1  
 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
Michael MARSOLEK	02/23/2010
Bruce E. RITTMANN	02/23/2010
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	ARIZONA BOARD OF REGENTS FOR AND ON BEHALF OF ARIZONA STATE UNIVERSITY
<b>Street Address:</b>	1475 North Scottsdale Road
<b>Internal Address:</b>	SkySong - Suite 200
<b>City:</b>	Scottsdale
<b>State/Country:</b>	ARIZONA
<b>Postal Code:</b>	85257
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	12672417
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(512)536-4598
<i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i>	
<b>Phone:</b>	5124745201
<b>Email:</b>	rortiz@fulbright.com
<b>Correspondent Name:</b>	Christopher W. Spence
<b>Address Line 1:</b>	600 Congress Avenue
<b>Address Line 2:</b>	Suite 2400
<b>Address Line 4:</b>	Austin, TEXAS 78701
<b>ATTORNEY DOCKET NUMBER:</b>	11000433/ AZTE:051US
<b>NAME OF SUBMITTER:</b>	Christopher W. Spence
Total Attachments: 4	

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**PATENT  
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ASSIGNMENT

FOR GOOD AND VALUABLE CONSIDERATION, the receipt, sufficiency and adequacy of which are hereby acknowledged, the undersigned, do hereby:

SELL, ASSIGN AND TRANSFER to ARIZONA BOARD OF REGENTS FOR AND ON BEHALF OF ARIZONA STATE UNIVERSITY (the "Assignee"), having a place of business at 1475 North Scottsdale Road, SkySong - Suite 200, Scottsdale, AZ 85257, the entire right, title and interest for the United States and all foreign countries in and to any and all improvements which are disclosed in the application for United States Letters Patent, Serial No. **12/672,417**, which has been filed on **February 5, 2010** and is entitled "**INTIMATE COUPLING OF PHOTOCATALYSIS AND BIODEGRADATION IN A PHOTOCATALYTIC CIRCULATING-BED BIOFILM REACTOR,**" which is a national phase application under 35 U.S.C. § 371 of International Application No. PCT/US2008/072657 filed August 8, 2008, which claims priority to U.S. Provisional Patent Application Serial No. 60/955,310, filed on August 10, 2007, such application and all divisional, continuing, substitute, renewal, reissue and all other applications for patent which have been or shall be filed in the United States and all foreign countries on any of such improvements; all original and reissued patents which have been or shall be issued in the United States and all foreign countries on such improvements; and specifically including the right to file foreign applications under the provisions of any convention or treaty and claim priority based on such application in the United States;

AUTHORIZE AND REQUEST the issuing authority to issue any and all United States and foreign patents granted on such improvements to the Assignee;

WARRANT AND COVENANT that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been or will be made to others by the undersigned, and that the full right to convey the same as herein expressed is possessed by the undersigned;

COVENANT, when requested and at the expense of the Assignee, to carry out in good faith the intent and purpose of this assignment, the undersigned will execute all divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all such improvements; execute all rightful oaths, declarations, assignments, powers of attorney and other papers; communicate to the Assignee all facts known to the undersigned relating to such improvements and the history thereof; and generally do everything possible which the Assignee shall consider desirable for vesting title to such improvements in the Assignee, and for securing, maintaining and enforcing proper patent protection for such improvements;

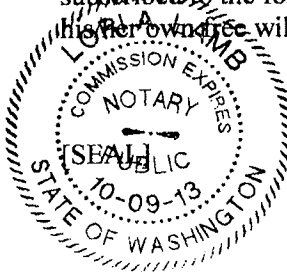
TO BE BINDING on the heirs, assigns, representatives and successors of the undersigned and extend to the successors, assigns and nominees of the Assignee.

The assignment of said invention is effective as of the earlier of (1) the date of execution shown below or (2) the filing date of the first filed of said patent applications.

Signature: *Michael Marsolek* Date: 2-23-2010  
Name: Michael MARSOLEK

STATE OF Washington  
COUNTY OF King

BEFORE ME, the undersigned authority, on this 23 day of February, 2010 personally appeared Michael MARSOLEK, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he/she executed the same of his/her own free will for the purposes and consideration therein expressed.



*Lora A. Lamb*  
Notary or Consular Officer

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Name: Bruce E. RITTMANN

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

BEFORE ME, the undersigned authority, on this \_\_\_\_ day of \_\_\_\_\_, 2010 personally appeared Bruce E. RITTMANN, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he/she executed the same of his/her own free will for the purposes and consideration therein expressed.

\_\_\_\_\_  
Notary or Consular Officer

[SEAL]

FULBRIGHT & JAWORSKI L.L.P.  
600 Congress Avenue, Suite 2400  
Austin, Texas 78701

ASSIGNMENT

FOR GOOD AND VALUABLE CONSIDERATION, the receipt, sufficiency and adequacy of which are hereby acknowledged, the undersigned, do hereby:

SELL, ASSIGN AND TRANSFER to ARIZONA BOARD OF REGENTS FOR AND ON BEHALF OF ARIZONA STATE UNIVERSITY (the "Assignee"), having a place of business at 1475 North Scottsdale Road, SkySong - Suite 200, Scottsdale, AZ 85257, the entire right, title and interest for the United States and all foreign countries in and to any and all improvements which are disclosed in the application for United States Letters Patent, Serial No. **12/672,417**, which has been filed on **February 5, 2010** and is entitled "**INTIMATE COUPLING OF PHOTOCATALYSIS AND BIODEGRADATION IN A PHOTOCATALYTIC CIRCULATING-BED BIOFILM REACTOR,**" which is a national phase application under 35 U.S.C. § 371 of International Application No. PCT/US2008/072657 filed August 8, 2008, which claims priority to U.S. Provisional Patent Application Serial No. 60/955,310, filed on August 10, 2007, such application and all divisional, continuing, substitute, renewal, reissue and all other applications for patent which have been or shall be filed in the United States and all foreign countries on any of such improvements; all original and reissued patents which have been or shall be issued in the United States and all foreign countries on such improvements; and specifically including the right to file foreign applications under the provisions of any convention or treaty and claim priority based on such application in the United States;

AUTHORIZE AND REQUEST the issuing authority to issue any and all United States and foreign patents granted on such improvements to the Assignee;

WARRANT AND COVENANT that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been or will be made to others by the undersigned, and that the full right to convey the same as herein expressed is possessed by the undersigned;

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TO BE BINDING on the heirs, assigns, representatives and successors of the undersigned and extend to the successors, assigns and nominees of the Assignee.

The assignment of said invention is effective as of the earlier of (1) the date of execution shown below or (2) the filing date of the first filed of said patent applications.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Name: Michael MARSOLEK

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

BEFORE ME, the undersigned authority, on this \_\_\_\_\_ day of \_\_\_\_\_, 2010 personally appeared Michael MARSOLEK, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he/she executed the same of his/her own free will for the purposes and consideration therein expressed.

\_\_\_\_\_  
Notary or Consular Officer

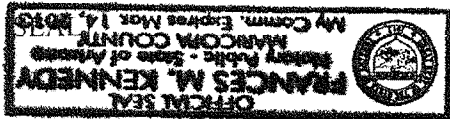
[SEAL]

Signature: Bruce E. Rittmann Date: Feb. 23, 2010  
Name: Bruce E. RITTMANN

STATE OF Arizona  
COUNTY OF Maricopa

BEFORE ME, the undersigned authority, on this 23 day of Febr, 2010 personally appeared Bruce E. RITTMANN, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he/she executed the same of his/her own free will for the purposes and consideration therein expressed.

Frances M. Kennedy  
Notary or Consular Officer



FULBRIGHT & JAWORSKI L.L.P.  
600 Congress Avenue, Suite 2400  
Austin, Texas 78701