TT/922180 12-26-2007 T 13 DEC 2007 DEPARTMENT OF COMMERCE Form PTO-1595 (Rev. 07/05) d States Patent and Trademark Office OMB No. 0651-0027 (exp. 6/30/2008) RECC 103470818 To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below. 2. Name and address of receiving party(ies) Name of conveying party(ies) Name: Carnegie Mellon University Birger Erik Ydstie Internal Address: Center for Technology Transfer Additional name(s) of conveying party(ies) attached? ☐ Yes 🗹 No 3. Nature of conveyance/Execution Date(s): Street Address: 5000 Forbes Avenue Execution Date(s) December 10, 2007 ✓ Assignment Merger City: Pittsburgh Change of Name Security Agreement Joint Research Agreement State: Pennsylvania **Government Interest Assignment** Country: United States of America Zip: 15213 Executive Order 9424, Confirmatory License Additional name(s) & address(es) attached? ☐ Yes ☑ No Other 4. Application or patent number(s): This document is being filed together with a new application. B. Patent No.(s) A. Patent Application No.(s) 11/922180 12/17/2007 MKAYPAGH 00000110 503198 11922180 04 FC:802: 40.00 DA Yes ✓ No Additional numbers attached? 6. Total number of applications and patents 5. Name and address to whom correspondence involved: One (1) concerning document should be mailed: Name:Darren E. Wolf 7. Total fee (37 CFR 1.21(h) & 3.41) \$ 40 Internal Address: Dickie, McCamey & Chilcote, P.C. Authorized to be charged by credit card ✓ Authorized to be charged to deposit account **Enclosed** Street Address: Two PPG Place, Suite 400 None required (government interest not affecting title) 8. Payment Information City: Pittsburgh

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Darren E. Wolf

Name of Person Signing

Signatyre

State: Pennsylvania

9. Signature:

Phone Number: 412-392-568

Email Address: dwolf@dmcldw.com

Fax Number: 412-392-5656

December 13, 2007

Date

a. Credit Card Last 4 Numbers

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Authorized User Name Darren E. Wolf

Expiration Date

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TT/9000 PCT 13 DEC 2007

ASSIGNMENT OF INVENTION

For: 🛛 For: 🗍 For: 🎗	U.S. and/or Foreign Rights U.S. Application or U.S. Provision U.S. Patent PCT Application Inventor(s) or Present Owner	nal Application		
In consideration of the payment by ASSIGNEE(S) to ASSIGNOR(S) of the sum of One Dollar (\$1.00), the ecceipt of which is hereby acknowledged, and for other good and valuable consideration,				
ASSIGNOR(S)				
Birger Erik YDSTIE	Carnegie Mellon University Department of Chemical Engineering 5000 Forbes Avenue Pittsburgh, PA 15213 United States of America	United States		
lame of Assignor	Address	Nationality		
creby sells, assigns and trans				
Carnegie Mellon University	Attn: Center for Technology Transf 5000 Forbes Avenue Pittsburgh, PA 15213 United States of America	Pennsylvania Non-Profit Corporation Nationality		
Name of ASSIGNEE)	Address	Madorania		
nd the successors, assigns and	i legal representatives of the ASSIGNI	EE(S)		
the entire right, title and interest for the United States and its territorial possessions				
an undivided possessions	percent (%) interest for the United States and its territorial		
and in all foreign countries;				
including all rights to claim priority, all rights to file patent applications, and all other intellectual property rights, in and to any and all improvements, inventions, and other intellectual property which is/are found in:				
(a) U.S. patent application executed on even date herewith, and entitled "APPARATUSES, SYSTEMS, AND METHODS UTILIZING ADAPTIVE CONTROL", to be filed on December 13, 2007, having Reference Number CMU05-065PCT-US, and claiming priority from International application serial number PCT/US2005/020863, filed June 13, 2005.				
(b) the application(s)	and invention disclosure(s) identified	in the Attachments hereto.		
	cation executed on			
		also served in the contract of		
(e) International application serial number <u>PCT/US2005/020863</u> , and entitled <u>"APPARATUSES, SYSTEMS, AND METHODS UTILIZING ADAPTIVE CONTROL"</u> , filed on <u>June 13, 2005</u> , and having Reference Number <u>2005-065PCT</u> .				
Each Inventor: Initial and date here for acknowledgement of this page				

Assignment of Invention - Page 1 of 2

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(f) [issued ich correspondence is to be sent regarding patent maintenar	nce fees is being	
(g) 🗌	Other:			
(h) 🔀	and any legal equivalent thereof in any country, including the right to claim priority and, in and to, all Letters Patent to be obtained for said invention by a new application or by the above application or any continuation, division, renewal, or substitute thereof, and as to letters patent any reissue or re-examination thereof.			
	NOR(S) hereby covenants that no which would conflict with this as	o assignment, sale, agreement or encumbrance has been or vestignment;	will be made or	
ASSIGNOR(S) further covenants that ASSIGNEE(S) will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR(S) and will testify as to the same in any interference, litigation or proceeding related thereto and will promptly execute and deliver to ASSIGNEE(S) or its legal representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the purposes thereof. IN WITNESS WHEREOF, ASSIGNOR(S) have hereunto set hand and seal this:				
Birger Erik Y	^r dstie	Signature of Assignor or Person entitled to sign on behalf of Assignor	12-10-07 Date	
Place of signi	ing of assignment			
State	: Pittsburgh/Allegheny County : Pennsylvania : United States of America			
Before me this day of <u>December</u> , 2007 personally appeared <u>Birger Erik Ydstie</u> to me known to be the person who is described in and who executed the foregoing assignment instrument and acknowledged its contents of his/her own free will for the purpose therein expressed.				
		Notary Public or Consular Officer of the United States of Am		

Assignment of Invention - Page 2 of 2

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United States Patent and Trademark Office

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PATENTS ONLY				
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1. Name of conveying party(ies)	2. Name and address of receiving party(ies)			
Birger Erik Ydstie	Name: Carnegie Mellon University			
	Internal Address: Center for Technology Transfer			
Additional name(s) of conveying party(ies) attached? Yes V No				
3. Nature of conveyance/Execution Date(s):	Street Address: 5000 Forbes Avenue			
Execution Date(s) December 10, 2007				
✓ Assignment				
Security Agreement Change of Name	City: Pittsburgh			
Joint Research Agreement	State: Pennsylvania			
Government Interest Assignment	Country: United States of America Zip:15213			
Executive Order 9424, Confirmatory License	Country. Office Graces of Automotive Lap.			
Other	Additional name(s) & address(es) attached? ☐ Yes ✓ No			
	document is being filed together with a new application.			
A. Patent Application No.(s)	B. Patent No.(s)			
,				
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Additional numbers att	ached? Yes No			
5. Name and address to whom correspondence concerning document should be mailed:	6. Total number of applications and patents involved: One (1)			
Name:Darren E. Wolf	7. Total fee (37 CFR 1.21(h) & 3.41) \$ 40			
Internal Address: Dickie, McCamey & Chilcote, P.C.	Authorized to be charged by credit card			
	✓ Authorized to be charged to deposit account			
Street Address: Two PPG Place, Suite 400	Enclosed			
	None required (government interest not affecting title)			
City: Pittsburgh	8. Payment Information			
State: Pennsylvania Zip:15222-5402	a. Credit Card Last 4 Numbers Expiration Date			
Phone Number: 412-392-5681	•			
Fax Number: 412-392-5650	b. Deposit Account Number <u>50-3198</u>			
Email Address: dwolf@amclaw.com	Authorized User Name Darren E. Wolf			
9. Signature:				
Signature. Signature				
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> **PATENT REEL: 020296 FRAME: 0157**

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