

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>Neal M. Patel</td><td>01/15/2009</td></tr><tr><td>John E. Renaud</td><td>01/21/2009</td></tr><tr><td>Chandan K. Mozumder</td><td>01/21/2009</td></tr><tr><td>Byungsoo Kang</td><td>02/02/2009</td></tr></tbody></table>	Name	Execution Date	Neal M. Patel	01/15/2009	John E. Renaud	01/21/2009	Chandan K. Mozumder	01/21/2009	Byungsoo Kang	02/02/2009	
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Neal M. Patel	01/15/2009										
John E. Renaud	01/21/2009										
Chandan K. Mozumder	01/21/2009										
Byungsoo Kang	02/02/2009										
RECEIVING PARTY DATA											
Name:	THE UNIVERSITY OF NOTRE DAME DU LAC										
Street Address:	511 Main Building										
City:	Notre Dame										
State/Country:	INDIANA										
Postal Code:	46556-4629										
PROPERTY NUMBERS Total: 1											
<table border="1"><thead><tr><th>Property Type</th><th>Number</th></tr></thead><tbody><tr><td>Application Number:</td><td>12340192</td></tr></tbody></table>	Property Type	Number	Application Number:	12340192							
Property Type	Number										
Application Number:	12340192										
CORRESPONDENCE DATA											
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NAME OF SUBMITTER:	Dohyun Ahn										
Total Attachments: 6											

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ASSIGNMENT

For good and valuable consideration, the receipt of which is hereby acknowledged, the person(s) named below (referred to as "INVENTOR" whether singular or plural) has sold, assigned, and transferred and does hereby sell, assign, and transfer to **THE UNIVERSITY OF NOTRE DAME DU LAC** having a place of business at 511 Main Building, Notre Dame, Indiana, ("ASSIGNEE"), for itself and its successors, transferees, and assignees, the following:

1. The entire worldwide right, title, and interest in all inventions and improvements ("SUBJECT MATTER") that are disclosed in the provisional application filed under 35 U.S.C. §111(b) or non-provisional application filed under 35 U.S.C. §111(a) and entitled **A Crashworthiness Design Methodology Using a Hybrid Cellular Automata Algorithm for the Synthesis of Topologies for Structures Subject to Nonlinear Transient Loading** ("APPLICATION"), which:

- ☒ was filed on December 19, 2008, and now bears U.S. application serial number 12/340,192; and
- ☒ claims priority from a provisional application, filed on December 21, 2007, now bearing U.S. application serial number 61/016,311.

2. The entire worldwide right, title, and interest in and to:
(a) the APPLICATION; (b) all applications claiming priority from the APPLICATION;
(c) all provisional, utility, divisional, continuation, substitute, renewal, reissue, and other applications related thereto which have been or may be filed in the United States or elsewhere in the world; (d) all patents (including reissues and re-examinations) which may be granted on the applications set forth in (a), (b), and (c) above; and (e) all right of priority in the APPLICATION and in any underlying provisional or foreign application, together with all rights to recover damages for infringement of provisional rights.

INVENTOR agrees that ASSIGNEE may apply for and receive patents for SUBJECT MATTER in ASSIGNEE's own name.

INVENTOR agrees to do the following, when requested, and without further consideration, in order to carry out the intent of this Assignment: (1) execute all oaths, assignments, powers of attorney, applications, and other papers necessary or desirable to fully secure to ASSIGNEE the rights, titles and interests herein conveyed; (2) communicate to ASSIGNEE all known facts relating to the SUBJECT MATTER; and (3) generally do all lawful acts that ASSIGNEE shall consider desirable for securing, maintaining, and enforcing worldwide patent protection relating to the SUBJECT MATTER and for vesting in ASSIGNEE the rights, titles, and interests herein conveyed. INVENTOR further agrees to provide any successor, assign, or legal representative of ASSIGNEE with the benefits and assistance provided to ASSIGNEE hereunder.

Title:

A Crashworthiness Design Methodology Using a Hybrid Cellular Automata Algorithm for the Synthesis of Topologies for Structures Subject to Nonlinear Transient Loading

Filed:

December 19, 2008

Application No.:

12/340,192

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INVENTOR grants the attorney of record the power to insert on this Assignment any further identification that may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document.

This Assignment may be executed in one or more counterparts, each of which shall be deemed an original and all of which may be taken together as one and the same Assignment.

Name and Signature

Date of Signature

John E. Renaud

Name and Signature

Date of Signature

Neal M. Patel

1/15/09

Neal M. Patel

Name and Signature

Date of Signature

Byungsoo Kang

Name and Signature

Date of Signature

Chandan K. Mozumder

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1/21/2007

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Neal M. Patel


Date of Signature

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Byungsoo Kang

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Chandan K. Mozumder

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