PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

SUBMISSION TYPE: NEW ASSIGNMENT

NATURE OF CONVEYANCE: **ASSIGNMENT**

CONVEYING PARTY DATA

Name	Execution Date
Kevin J. Bowers	05/27/2005

RECEIVING PARTY DATA

Name:	D. E. Shaw Research, LLC
Street Address:	120 West Forty-Fifth Street
Internal Address:	39th Floor, Tower 45
City:	New York
State/Country:	NEW YORK
Postal Code:	10036

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	12775847

CORRESPONDENCE DATA

Fax Number: (617)500-2499

Correspondence will be sent via US Mail when the fax attempt is unsuccessful.

617-500-2500 Phone:

chandler@ORTPATENT.COM Email: Correspondent Name: OCCHIUTI ROHLICEK & TSAO, LLP

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CAMBRIDGE, MASSACHUSETTS 02138 Address Line 4:

ATTORNEY DOCKET NUMBER: 30023-011002

NAME OF SUBMITTER: Cassie A. Chandler

Total Attachments: 2

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REEL: 024354 FRAME: 0251

PATENT

JOINT ASSIGNMENT Attorney Docket No.: 30023-011001

ASSIGNMENT

For valuable consideration, we, Kevin J. Bowers of 3 Freeman Lane, Bridgewater, NJ 08807, hereby assign to **D. E. Shaw Research, LLC**, a Delaware limited liability company, having a place of business at 120 West Forty-Fifth Street, 39th Floor, Tower 45, New York, New York, 10036, and its successors and assigns (collectively hereinafter called "the Assignee"), effective as of August 16, 2007, the entire right, title and interest throughout the world in the inventions and improvements which are subject of an application for United States Patent signed by us, entitled COMPUTATION OF MULTIPLE BODY INTERACTIONS, filed March 21, 2008. and assigned U.S. Serial Number 12/053,170, and we authorize and request the attorneys appointed in said application to hereafter complete this assignment by inserting above the filing date and serial number of said application when known; this assignment including said application, U.S. Provisional 60/896,675, U.S. Provisional 60/909,037, International Serial Number PCT/US08/57853, and any and all United States and foreign patents, utility models, and design registrations granted for any of said inventions or improvements, and the right to claim priority based on the filing date of said application under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes; and we authorize the Assignee to apply in all countries in our name or in its own name for patents, utility models, design registrations and like rights of exclusion and for inventors' certificates for said inventions and improvements; and we agree for ourselves and our respective heirs, legal representatives and assigns, without further compensation to perform such lawful acts and to sign such further applications, assignments, Preliminary Statements and other lawful documents as the Assignee may reasonably request to effectuate fully this assignment.

> PATENT REEL: 024354 FRAME: 0252

RECORDED: 05/07/2010

JOINT ASSIGNMENT Attorney Docket No.: 30023-011001

WITNESS my hand and official seal.

Notary Public

NGTART PURLIC, Sein of New York
Also Commission Filed in New York County,
Conflicts Filed in New York County,
Commission Expires June 2, 20 31