PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
PING TAK PETER TANG	07/06/2017
J.P. GROSSMAN	07/19/2017
BRANNON BATSON	07/13/2017
RON DROR	07/19/2017

RECEIVING PARTY DATA

Name:	D.E. SHAW RESEARCH, LLC
Street Address:	120 W. 45TH ST
Internal Address:	39TH FLOOR
City:	NEW YORK
State/Country:	NEW YORK
Postal Code:	10036

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16566041

CORRESPONDENCE DATA

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ATTORNEY DOCKET NUMBER:	30023-019002
NAME OF SUBMITTER:	ANDREA R OCCHIUTI
SIGNATURE:	/Andrea R. Occhiuti/
DATE SIGNED:	09/10/2019

Total Attachments: 3

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> PATENT REEL: 050328 FRAME: 0011

JOINT ASSIGNMENT Attorney Docket No.: 30023-019US1

ASSIGNMENT

For valuable consideration, we, Ping Tak Peter Tang of 4 Whitehall Avenue, Edison, NJ 08820, J.P. Grossman of 347 W. Hills Rd., Huntington, NY 11743, Brannon Batson of 55 Poplar Street, Apt 3B, Brooklyn, NY 11201, Ron Dror of 817 Santa Fe Ave., Stanford, CA 94305, hereby assign to D.E. Shaw Research, LLC, a corporation of Delaware, having a place of business at 120 W. 45th St., 39th Floor, New York, NY 10036, and its successors and assigns (collectively hereinafter called "the Assignee"), 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 SUPPRESSING INTERACTION BETWEEN BONDED PARTICLES, filed 5/15/2017, and assigned U.S. Serial Number 15/526,846, 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, 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.

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Date: 7/19/2017	J.P. grossman
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RECORDED: 09/10/2019