09-05-2000 U.S. Department of Commerce FORM PTO -1619A Patent and Trademark Office Expires 06/30 **PATENT** OMB 0651 101448431 2 9 2000 RECORDATION FORM COVER SHEET PATENTS ONLY TO: The fer of Patents and Trademarks: Please record the attached original documents(s) or copy(jes). Submission Type Conveyance Type X | Assignment X New Security Agreement Resubmission (Non-Recordation) License Change of Name Document ID # **Correction of PTO Error** Merger Other Reel # Frame # U.S. Government (For Use ONLY by U.S. Government Agencies) **Corrective Document** Reel # **Departmental File** Frame # Secret File Conveying Party Mark if additional names of conveying parties attached **Effective Date** Month Day Year Name (line 1) Barabasi, Albert-Laszlo 08 23 2000 Name (line 2) **Effective Date** Second Party Month Day Year Janko, Boldizsar Name (line 1) 08 24 2000 Name (line 2) Receiving Party Mark if additional names of conveying parties attached **University of Notre Dame** Name (line 1) If document to be recorded is an assignment and the receiving party is not Name (line 2) domiciled in the United States, an appointment of a domestic Address (line 1) representative is attached. (Designation must be a separate document from 511 Main Building Address (line 2) Assignment.) Address (line 3) **Notre Dame** Indiana 46556 City State/Country Zip Code **Domestic Representative Name and Address** Enter for the Receiving Party only Name Michael D. Rechtin Address (line 1) **FOLEY & LARDNER** Address (line 2) 330 North Wabash Avenue Address (line 3) **Suite 3300** Address (line 4) Chicago, Illinois 60611-3608 08/31/2000 BHABTEN 00000028 09531646 FOR OFFICE USE ONLY

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FORM PTO -1619B Expires 06/30/99 OMB 0651-0027 Page 2 U.S. Department of Commerce Patent and Trademark Office PATENT	
Correspondent Name and Address Area Code and Telephone Number (312) 755-1900	
Name Michael D. Rechtin 088328/0103	
Address (line 1) FOLEY & LARDNER	
Address (line 2) 330 North Wabash Avenue	
Address (line 3) Suite 3300	
Address (line 4) Chicago, Illinois 60611-3608	
Pages Enter the total number of pages of the attached conveyance document # 3	
Application Number(s) or Patent Number(s) Enter either the Patent Application Number or the Patent Number (DO NOT ENTER BOTH numbers for the same property). Patent Application Number(s) Patent Number(s) 09531646 If this document is being filed together with a new Patent Application, enter the date the patent application was signed by the first named executing inventor	
Patent Cooperation Treaty (PCT) Enter PCT application number only if a U.S. Application Number has not been assigned. PCT	
Number of Properties Enter the total number of properties involved. # 1	
Fee Amount Fee Amount for Properties Listed (37 CFR 3.41): \$ 40.00	
Method of Payment: X Enclosed Deposit Account	
Deposit Account (Enter for payment by deposit account or if additional fees can be charged to the account.)	
Deposit Account Number: # 06-1450	
Authorization to charge additional fees: Yes X No	
Statement and Signature	
To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document. Charges to deposit account are authorized, as indicated herein.	
Michael D. Rechtin Name of Person Signing Reg. No. 30,128 Michael D. Rechtin Signature Michael D. Rechtin Signature Date Signed	

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Conveying Party Mark if additional names of conveying parties attach	ned
Enter additional Conveying Parties	Effective Date
Name (line 1) Lee, Choongseop	Month Day Year 08 23 2000
Name (line 2)	
Name (line 1) Derenyi, Imre	Effective Date Month Day Year 08 25 2000
Name (line 2)	
Name (line 1)	Effective Date Month Day Year
Name (line 2)	\neg
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Name (line 1)	If document to be recorded is an assignment and the
Name (line 2)	receiving party is not domiciled in the United
Address (line 1)	States, an appointment of a domestic representative is attached. (Designation must be a
Address (line 2)	separate document from Assignment.)
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	Assignment.)
Address (line 3) City State/Country Zip C	Code
Application Number(s) or Patent Number(s) Mark if additional numbers attac	hed
Enter either the Trademark Application Number or the Registration Number (DO NOT ENTER BOTH num	bers for the same property).
Patent Application Number(s) Patent Num	nber(s)

ASSIGNMENT

GRADUATE SCHOOL

PATENT

WHEREAS Albert-Laszlo Barabasi, Boldizsar Janko, Choongseop Lee and Imre Derenyi (hereketter single and collectively, "ASSIGNOR") invented REDUCING VORTEX DENSITIES AND TRANSPORTING VORTICES IN SUPERCONDUCTORS for which application for Letters Patent of the United States has been executed on even date herewith; and

WHEREAS, University of Noire Dame (hereinafter "ASSIGNEE"), a corporation organized and existing under and by virtue of the laws of the State of Indiana, and having its principal place of business at 511 Main Building, Notre Dame, Indiana 46556 and a mailing address of same is desirous of acquiring the full right, title and interest therein;

NOW, THEREFORE, in consideration of One Dollar (\$1.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, ASSIGNOR by these presents does sell, assign and transfer unto ASSIGNEE, its successors, assigns and legal representatives, the full and exclusive right to the invention as described in the aforesaid application, in the United States and all foreign countries, together with the right of priority under the International Convention for the Protection of Industrial Property, Inter-American Convention Relating to Patents, Designs and Industrial Models, and any other international agreements to which the United States adheres, and hereby authorize and request the Commissioner of Patents to issue said Letters Patent to ASSIGNEE, for the sole use and benefit of ASSIGNEE, its successors, assigns and legal representatives,

AND ASSIGNOR HEREBY AGREES to transfer a like interest upon request of ASSIGNEE, its successors, assigns and legal representatives, and without further remuneration, in and to any improvements and applications for patents based thereon, growing out of or relating to the invention; and to provide all reasonable assistance and execute any papers deemed essential by ASSIGNEE, its successors, assigns and legal representatives, to ASSIGNEE'S full protection and title in and to the invention hereby transferred,

ASSIGNOR AGREEING, FURTHERMORE, upon request of ASSIGNEE, and without further remuneration, to execute any and all papers desired by ASSIGNEE for the filing and granting of foreign applications and the perfecting of title thereto in ASSIGNEE.

(1) EXECUTED this 23rd da	y of August 2000
Alut-born Ben	
Albert-Laszlo Barabas	
State of Indiana	
County of St. Joseph)	
County of Beroesepin	
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	2000, before me, a notary public in and for said county, appeared
Albert-Laszlo Barabasi who is personally known t	2000, before me, a notary public in and for said county, appeared o me to be the same person whose name is subscribed to the signed, sealed and delivered the said instrument as his free and
Albert-Laszlo Barabasi who is personally known t	o me to be the same person whose name is subscribed to the signed, sealed and delivered the said instrument as his free and
Albert-Laszlo Barabasi who is personally known to foregoing instrument, and be acknowledged that he	o me to be the same person whose name is subscribed to the signed, sealed and delivered the said instrument as his free and orth.
Albert-Laszlo Barabasi who is personally known to foregoing instrument, and he acknowledged that he voluntary act for the uses and purposes therein set for the uses and purposes therein the uses and purposes the use of the use o	o me to be the same person whose name is subscribed to the signed, sealed and delivered the said instrument as his free and

Page 1 of 2

(2) EXECUTED this 24th day of Augu	st 2000
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for the uses and purposes therein set forth.	and volument as my tree and volument as
ca . N	Man Indian
(Seal)	Marie Valle Valle
	Notary Public Karen M. Pace
	My Commission Expires: 02/22/01
(3) EXECUTED this 23rd day of Augus	2000
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On this 251d day of August , 2000,	before me, a notary public in and for said county, appeared
Choongseop Lee who is personally known to me to be the instrument, and he acknowledged that he signed spaled at	e same person whose name is subscribed to the foregoing and delivered the said instrument as his-free and voluntary act
for the uses and purposes therein set forth.	- STATE AND THE AREA OF THE AR
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