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U.S. DEPARTMENT OF COMMERCE  
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To the Honorable Commissioner of Patents and Trademarks. Please record the attached original documents or copy thereof

1. Name of conveying party(ies):  
(1) Maria Flytzani-Stephanopoulos  
(2) Howard Saltsburg  
(3) Qi Fu  
Additional name(s) of conveying parties attached?  Yes  No.

2. Name and address of receiving party(ies)  
Name: Tufts University  
Internal Address: Ballou Hall  
  
Street Address: 4 Colby Street  
City: Medford State: MA ZIP: 02155  
Additional names and addresses attached?  Yes  No

3. Nature of conveyance:  
 Assignment  Merger  
 Security Agreement  Change of Name  
 Other: \_\_\_\_\_  
Execution Date: (1) 5/4/05 (2) 5/4/05 (3) 5/6/05

4. Application number(s) or patent number(s):  
If this document is being filed together with a new application, the execution date of the application is: (1) 5/4/05 (2) 5/4/05 (3) 5/5/05  
A. Patent Application No(s): \_\_\_\_\_  
B. Patent No(s): \_\_\_\_\_  
Additional numbers attached?  Yes  No

5. Name and address of party to whom correspondence concerning document should be mailed:  
Name: Joseph B. Milstein  
Internal Address: WALL MARJAMA & BILINSKI LLP  
Street Address: 101 South Salina Street, Suite 400  
City: Syracuse State: New York Zip: 13202  
Telephone: (315) 425-9000  
Fax: (315) 425-9114

6. Total number of applications and patents involved 1  
7. Total fee (37 CFR 3.41): .....\$ 40.00  
 Enclosed  
 Authorized to be charged to deposit account  
8. Deposit account number: 50-0289  
(Attach duplicate copy of this page if paying by deposit account)

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9. Signature.  
Joseph B. Milstein  
Joseph B. Milstein, Ph.D.  
Atty. Reg. No. 42,897  
Signature  
Date 05/06/05

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Mail documents to be recorded with required cover sheet information to:  
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**JOINT ASSIGNMENT**

We, **Maria FLYTZANI-STEPHANOPOULOS; Howard SALTSBURG; and Qi FU** believe that we are the inventors of the subject matter disclosed in the application for patent (hereinafter "the invention or inventions") identified herein as

**CATALYST HAVING METAL IN REDUCED QUANTITY AND REDUCED CLUSTER SIZE**

and further identified by Attorney Docket Number 1190-001 NP

for which the undersigned has executed an application for patent in the United States of America on May 6, 2005 and transmitted herewith.

which application for patent was filed on \_\_\_\_\_ and has been assigned Serial No. \_\_\_ / \_\_\_\_\_ by the United States Patent and Trademark Office.

In consideration of the sum of One Dollar (\$1.00) and other good and valuable consideration paid to each of the undersigned, the receipt and sufficiency of which is hereby acknowledged, each of the undersigned agrees to assign, and hereby does assign, transfer and set over to the Tufts University, a corporation incorporated in the Commonwealth of Massachusetts, and having a principal place of business at 4 Colby Street, Medford, Massachusetts 02155, (hereinafter designated as the Assignee) his or her entire right, title and interest in the invention or inventions as represented by the application for patent identified herein (the "application") in the United States, its territories, dependencies and possessions, his or her entire right, title, and interest in the application, and his or her entire right, title and interest in the invention or inventions as regards all other national jurisdictions and international entities that have the power to grant patents, wherever situated, including without limitation all applications for patent which claim priority to and/or the benefit of the subject matter disclosed in the application for patent identified herein, including any provisional application, utility application, design application, and/or plant application, as well as any continuation application, divisional application, continuation-in-part application, reissue application, reexamination application, patent interference proceeding, foreign national application and/or any application filed or to be filed under a patent treaty such as the International Convention for Protection of Industrial Property and/or the Patent Cooperation Treaty, and any Letters Patent which may be granted therefor in any jurisdiction.

In addition to the above assignment, each of the undersigned agrees to execute all papers necessary in connection with the application and any continuing applications, divisional applications, or continuations-in-part thereof, and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient.

Each of the undersigned agrees to execute all papers necessary in connection with any interference which may be declared concerning this application or continuation or division thereof and to cooperate with the Assignee in every way possible in obtaining evidence and going forward with such interference.

Each of the undersigned agrees to execute all papers and documents and perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial Property or similar agreements.

Each of the undersigned agrees to perform all affirmative acts which may be necessary to obtain a grant of a valid United States Patent to the Assignee.

Each of the undersigned hereby authorizes and requests the Commissioner of Patents to issue any and all Letters Patents of the United States resulting from said application or any divisions or continuing applications thereof to the said Assignee, as Assignee of the entire interest, and hereby covenants that he or she has full right to convey the entire interest herein assigned, and that he or she has not executed and will not execute, any agreement in conflict herewith.

Each of the undersigned hereby grants to any duly empowered legal representative, including specifically Thomas J. Wall, Owen D. Marjama, Peter J. Bilinski, George S. Blasiak, Robert E. Purcell, Dana F. Bigelow, Indranil Mukerji, Joseph B. Milstein, R. Stephen Rosenholm, James R. Muldoon, Joel Stettenheim, Thomas T. Aquilla, Joseph M. Geller, William W. Habelt, Denis J. Sullivan and Richard Roos of WALL MARJAMA & BILINSKI LLP, the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office or with the rules of any other national or international Patent Office for recordation of this document or a true copy thereof.

In witness whereof, this instrument has been executed by the undersigned on the date opposite the respective name of the undersigned.

This assignment should preferably be signed before: (a) a Notary Public if within the U.S.A. or (b) a U.S. Consul if outside the U.S.A. If neither, then it should be signed before at least two witnesses.

Date 5-04-05

Signature Maria Flytzani-Stephanopoulos (SEAL)  
Maria Flytzani-Stephanopoulos

COMMONWEALTH OF MASSACHUSETTS )  
COUNTY OF )ss.:

On this 4<sup>th</sup> day of May, 2005, before me personally came **Maria Flytzani-Stephanopoulos** to me known and known to me to be the person described in and who executed the within instrument and he acknowledged to me that he executed the same.

Jessica Elise Huckina  
Notary Public  
Commission Expires 10/24/2010

Date 4 May 05

Signature Howard Saltburg (SEAL)  
Howard Saltburg

COMMONWEALTH OF MASSACHUSETTS )  
COUNTY OF )ss.:

On this 4<sup>th</sup> day of May, 2005, before me personally came  
Howard Saltburg to me known and known to me to be the person described in and who  
executed the within instrument and he acknowledged to me that he executed the same.

Joanna Adelle Huckins  
Notary Public  
Commission Expires 10/29/2010



Date \_\_\_\_\_

Signature \_\_\_\_\_ (SEAL)  
Qi Fu

COMMONWEALTH OF MASSACHUSETTS )  
COUNTY OF )ss.:

On this \_\_\_\_\_ day of \_\_\_\_\_, 2005, before me personally came  
Qi Fu to me known and known to me to be the person described in and who executed the  
within instrument and he acknowledged to me that he executed the same.

\_\_\_\_\_  
Notary Public

Date \_\_\_\_\_

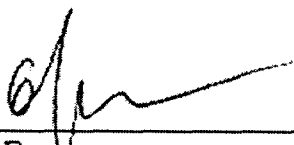
Signature \_\_\_\_\_ (SEAL)  
Howard Saltsburg

COMMONWEALTH OF MASSACHUSETTS )  
COUNTY OF \_\_\_\_\_ )ss.:

On this \_\_\_\_\_ day of \_\_\_\_\_, 2005, before me personally came  
Howard Saltsburg to me known and known to me to be the person described in and who  
executed the within instrument and he acknowledged to me that he executed the same.

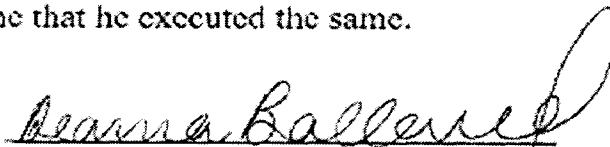
\_\_\_\_\_  
Notary Public

Date 5/6/05

Signature  \_\_\_\_\_ (SEAL)  
Qi Fu

STATE OF NEW MEXICO )  
COUNTY OF BERNALILLO )ss.:

On this 6<sup>th</sup> day of May, 2005, before me personally came  
Qi Fu to me known and known to me to be the person described in and who executed the  
within instrument and he acknowledged to me that he executed the same.

  
\_\_\_\_\_  
Notary Public