

## PATENT ASSIGNMENT

Electronic Version v07  
Stylesheet Version v02

| SUBMISSION TYPE:                                                                                                                                                                                                                                                                                                                   | NEW ASSIGNMENT                    | <b>APPLICATION NUMBER</b><br>10/707756 |        |               |             |      |                |                  |            |               |             |                                             |                  |                        |            |          |       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------------------------|--------|---------------|-------------|------|----------------|------------------|------------|---------------|-------------|---------------------------------------------|------------------|------------------------|------------|----------|-------|
| NATURE OF CONVEYANCE:                                                                                                                                                                                                                                                                                                              | ASSIGNMENT OF ASSIGNOR'S INTEREST |                                        |        |               |             |      |                |                  |            |               |             |                                             |                  |                        |            |          |       |
| CONVEYING PARTY DATA                                                                                                                                                                                                                                                                                                               |                                   |                                        |        |               |             |      |                |                  |            |               |             |                                             |                  |                        |            |          |       |
| <table border="1"><thead><tr><th>Name</th><th>Execution Date</th></tr></thead><tbody><tr><td>Alvin J. Joseph</td><td>2003-12-16</td></tr><tr><td>Qizhi Liu</td><td>2003-12-11</td></tr><tr><td>BethAnn Rainey</td><td>2003-12-10</td></tr><tr><td>Kathryn T. Schonenberg</td><td>2003-12-08</td></tr></tbody></table>              |                                   |                                        |        |               |             | Name | Execution Date | Alvin J. Joseph  | 2003-12-16 | Qizhi Liu     | 2003-12-11  | BethAnn Rainey                              | 2003-12-10       | Kathryn T. Schonenberg | 2003-12-08 |          |       |
| Name                                                                                                                                                                                                                                                                                                                               | Execution Date                    |                                        |        |               |             |      |                |                  |            |               |             |                                             |                  |                        |            |          |       |
| Alvin J. Joseph                                                                                                                                                                                                                                                                                                                    | 2003-12-16                        |                                        |        |               |             |      |                |                  |            |               |             |                                             |                  |                        |            |          |       |
| Qizhi Liu                                                                                                                                                                                                                                                                                                                          | 2003-12-11                        |                                        |        |               |             |      |                |                  |            |               |             |                                             |                  |                        |            |          |       |
| BethAnn Rainey                                                                                                                                                                                                                                                                                                                     | 2003-12-10                        |                                        |        |               |             |      |                |                  |            |               |             |                                             |                  |                        |            |          |       |
| Kathryn T. Schonenberg                                                                                                                                                                                                                                                                                                             | 2003-12-08                        |                                        |        |               |             |      |                |                  |            |               |             |                                             |                  |                        |            |          |       |
| RECEIVING PARTY DATA                                                                                                                                                                                                                                                                                                               |                                   |                                        |        |               |             |      |                |                  |            |               |             |                                             |                  |                        |            |          |       |
| <table border="1"><thead><tr><th>Name</th><th>Street Address</th><th>Internal Address</th><th>City</th><th>State/Country</th><th>Postal Code</th></tr></thead><tbody><tr><td>International Business Machines Corporation</td><td>New Orchard Road</td><td></td><td>Armonk</td><td>NEW YORK</td><td>10504</td></tr></tbody></table> |                                   |                                        |        |               |             | Name | Street Address | Internal Address | City       | State/Country | Postal Code | International Business Machines Corporation | New Orchard Road |                        | Armonk     | NEW YORK | 10504 |
| Name                                                                                                                                                                                                                                                                                                                               | Street Address                    | Internal Address                       | City   | State/Country | Postal Code |      |                |                  |            |               |             |                                             |                  |                        |            |          |       |
| International Business Machines Corporation                                                                                                                                                                                                                                                                                        | New Orchard Road                  |                                        | Armonk | NEW YORK      | 10504       |      |                |                  |            |               |             |                                             |                  |                        |            |          |       |
| CORRESPONDENCE DATA                                                                                                                                                                                                                                                                                                                |                                   |                                        |        |               |             |      |                |                  |            |               |             |                                             |                  |                        |            |          |       |
| FAX NUMBER: 518-449-0047<br><i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i><br>When the customer number has been provided, the Office of Public Records will obtain the correspondence data from the official record on file at the USPTO.<br>CUSTOMER NUMBER: 023550                         |                                   |                                        |        |               |             |      |                |                  |            |               |             |                                             |                  |                        |            |          |       |
| NAME OF PERSON SIGNING:                                                                                                                                                                                                                                                                                                            | Anthony J. Canale /s/             |                                        |        |               |             |      |                |                  |            |               |             |                                             |                  |                        |            |          |       |
| DATE SIGNED:                                                                                                                                                                                                                                                                                                                       | 2003-12-17                        |                                        |        |               |             |      |                |                  |            |               |             |                                             |                  |                        |            |          |       |
| Total Attachments: 3<br>source=BUR920030150US1Assign1.tif<br>source=BUR920030150US1Assign2.tif<br>source=BUR920030150US1Assign3.tif                                                                                                                                                                                                |                                   |                                        |        |               |             |      |                |                  |            |               |             |                                             |                  |                        |            |          |       |

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**PATENT ASSIGNMENT FORM**

For and in consideration of good and valuable consideration, the receipt and sufficiency thereof being hereby acknowledged, each undersigned inventor acknowledges his/her prior and ongoing obligation to sell, assign, and transfer, and agrees to sell, assign, and transfer the entire world wide right, title and interest for the United States and all foreign countries, in and to any and all inventions and improvements conceived during and within the scope of his/her employment, and further acknowledges that he/she has sold, assigned, and transferred, and hereby sells, assigns, and transfers, unto:

**INTERNATIONAL BUSINESS MACHINES CORPORATION ("IBM"),  
Armonk, New York 10504**

a corporation of New York, and IBM desires to acquire all right, title, and interest, in and to the certain inventions (identified below), applications, and any United States and foreign patents to be obtained therefor relating to:

**Title of Invention for SELF-ALIGNED RAISED EXTRINSIC BASE BIPOLAR TRANSISTOR STRUCTURE AND METHOD**

United States Patent

as set forth in United States Patent Application executed by each undersigned inventor on the date indicated by each inventor signature below, and further identified by **Attorney Docket Number BUR920030150US1**;

(select one): ☒ executed concurrently herewith or ☐ Serial No. \_\_\_\_\_ Filed on \_\_\_\_\_

for and to said United States Patent Application including any and all divisions or continuations thereof and in and to any and all Letters Patent of the United States and foreign patents and all rights of priority to be obtained therefor which may issue on any such application or for said invention therein disclosed, including any and all reissues or extensions thereof, to be held and enjoyed by, its successors, legal representatives and assigns to the full end of the term or terms for which any and all such Letters Patent may be granted as fully and entirely as would have been held and enjoyed by the undersigned had this Assignment not been made;

Each undersigned inventor hereby authorizes and requests the Commissioner of Patents and Trademarks to issue any and all such Letters Patent to IBM, its successors and assigns, in accordance herewith;

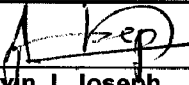
Each undersigned inventor warrants and covenants that he/she has the full and unencumbered right to sell and assign the interests hereby sold and assigned and that he/she has not executed and will not execute any document or instrument in conflict herewith;

Each undersigned inventor further covenants and agrees that he/she, upon the request and at the expense of the IBM, will execute and deliver any papers, make all rightful oaths, testify in any legal proceeding relating to said inventions and improvements, communicate to the IBM all facts known to the undersigned relating to such inventions and improvements and the history thereof; and perform all other lawful acts deemed necessary or desirable by IBM, and its legal representatives, to secure, maintain, and enforce patent protection for such inventions and improvements and for vesting title to such inventions and improvements in the IBM, and in particular to perfect title to said above-identified certain inventions, and applications including divisions and continuations thereof, and any and all Letters Patent which may be granted therefor or thereon, including reissues, extensions, or counterparts;

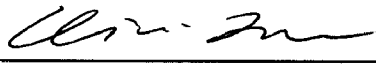
Each undersigned inventor hereby grants the IBM and the firm of the power to insert in this Assignment any further identification which may be necessary or desirable for recordation of this Assignment.

This assignment is governed by the substantive laws of the state of New York.

Executed by Inventor 1 of 4

Signature:  Date: 12/16/03  
Alvin J. Joseph

Executed by Inventor 2 of 4

Signature:  Date: 12/11/03  
Qizhi Liu

Executed by Inventor 3 of 4

Signature:  Date: 12/10/03  
BethAnn Rainey

Executed by Inventor 4 of 4

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Kathryn T. Schonenberg

Executed by Inventor 1 of 4

Signature \_\_\_\_\_ Date: \_\_\_\_\_  
Alvin J. Joseph

Executed by Inventor 2 of 4

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Qizhi Liu

Executed by Inventor 3 of 4

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
BethAnn Rainey

Executed by Inventor 4 of 4

Signature: Kathryn T. Schonenberg Date: December 8, 2003  
Kathryn T. Schonenberg