State of Delaware Secretary of State Division of Corporations Delivered 07:33 PM 05/04/2006 FILED 07:21 PM 05/04/2006 SRV 060422417 - 3681894 FILE

AMENDED AND RESTATED CERTIFICATE OF INCORPORATION OF AVIDIA, INC.

Peter Van Vlasselaer, Ph.D. hereby certifies that:

ONE: The original name of this company is AVIDIA RESEARCH INSTITUTE and the date of filing the original Certificate of Incorporation of this company with the Secretary of State of the State of Delaware was July 15, 2003.

TWO: He is the duly elected and acting Chief Executive Officer of Avidia, Inc., a Delaware corporation

THREE: The Certificate of Incorporation of this company is hereby amended and restated to read as follows:

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The name of the corporation is AVIDIA, INC. (the "Company").

H.

The address of the registered office of the Company in the State of Delaware is 2711 Centerville Road, Suite 400, City of Wilmington, County of New Castle, Zip Code 19808, and the name of the registered agent of the Company in the State of Delaware at such address is Corporation Service Company.

III.

The purpose of the Company is to engage in any lawful act or activity for which a corporation may be organized under the General Corporation Law of the State of Delaware.

IV.

A. The Company is authorized to issue two classes of stock to be designated, respectively, "Common Stock" and "Preferred Stock." The total number of shares that the Company is authorized to issue is thirty three million nine hundred ninety-one thousand six hundred fifty-two (33,991,652) shares. Twenty million (20,000,000) of which shall be Common Stock (the "Common Stock") and thirteen million nine hundred ninety-one thousand six hundred fifty-two (13,991,652) of which shall be Preferred Stock (the "Preferred Stock"). The Preferred Stock shall have a par value of one-hundredth of one cent (\$0.0001) per share and the Common Stock shall have a par value of one-hundredth of one cent (\$0.0001) per share.

- B. Subject to compliance with applicable protective and voting rights provisions that have been granted to outstanding series of Preferred Stock in this Certificate of Incorporation, the number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares of Common Stock then outstanding) by the affirmative vote of the holders of a majority of the stock of the Company (voting together on an as-if-converted basis), irrespective of the provisions of Section 242(b)(2) of the Delaware General Corporate Law.
- C. Three hundred forty thousand (340,000) of the authorized shares of Preferred Stock are hereby designated "Series A-1 Preferred Stock" (the "Series A-1 Preferred"), four hundred eighty-six thousand six hundred sixty-three (486,663) of the authorized shares of Preferred Stock are hereby designated "Series A Preferred Stock" (the "Series A Preferred"), six million one hundred seventy-three thousand three hundred thirty-seven (6,173,337) of the authorized shares of Preferred Stock are hereby designated "Series B Preferred Stock" (the "Series B Preferred"), and six million nine hundred ninety-one thousand six hundred fifty-two (6,991,652) of the authorized shares of Preferred Stock are hereby designated "Series C Preferred Stock" (the "Series C Preferred").
- D. The rights, preferences, privileges, restrictions and other matters relating to the Preferred Stock are as follows:

1. DIVIDEND RIGHTS.

(a) The holders of Series C Preferred and Series B Preferred, in preference to the holders of Series A Preferred, Series A-1 Preferred and Common Stock, shall be entitled to receive, when and as declared by the Board of Directors, but only out of funds that are legally available therefor, cash dividends at the rate of eight percent (8%) of the applicable Original Issue Price (as defined below) per annum on each outstanding share of Series C Preferred and Series B Preferred (as adjusted for any stock dividends, combinations, splits, recapitalizations and the like with respect to such shares) held by them. The holders of Series A Preferred, in preference to the holders of Series A-1 Preferred and Common Stock, shall be entitled to receive, when and as declared by the Board of Directors, but only out of funds that are legally available therefor, cash dividends at the rate of eight percent (8%) of the applicable Original Issue Price (as defined below) per annum on each outstanding share of Series A Preferred (as adjusted for any stock dividends, combinations, splits, recapitalizations and the like with respect to such shares). The holders of Series A-1 Preferred, in preference to the holders of Common Stock, shall be entitled to receive, when and as declared by the Board of Directors, but only out of funds that are legally available therefor, cash dividends at the rate of eight percent (8%) of the applicable Original Issue Price (as defined below) per annum on each outstanding share of Series A-1 Preferred (as adjusted for any stock dividends, combinations, splits, recapitalizations and the like with respect to such shares). The "Original Issue Price" of the Series A-1 Preferred shall be \$7.50 per share. The "Original Issue Price" of the Series A Preferred shall be \$7.50 per share. The "Original Issue Price" of the Series B Preferred shall be \$4,75683 per share. The "Original Issue Price" of the Series C Preferred shall be \$6.26 per share. Such dividends shall be payable only when, as and if declared by the Board of Directors and shall be non-cumulative.

So long as any shares of Series C Preferred or Series B Preferred shall be outstanding, no dividend, whether in cash or property, shall be paid or declared, nor shall any other distribution be made, on any Series A Preferred, Series A-1 Preferred or Common Stock, nor shall any shares of Series A Preferred, Series A-1 Preferred or Common Stock be purchased, redeemed, or otherwise acquired for value by the Company (except for acquisitions of Common Stock by the Company pursuant to agreements that permit the Company to repurchase such shares upon termination of services to the Company or in exercise of the Company's right of first refusal upon a proposed transfer) until all dividends (set forth in Section 1(a)) on the Series C Preferred and Series B Preferred shall have been paid or declared and set apart. So long as any shares of Series A Preferred shall be outstanding, no dividend, whether in cash or property, shall be paid or declared, nor shall any other distribution be made, on any Series A-1 Preferred or Common Stock, nor shall any shares of Series A-1 Preferred or Common Stock be purchased, redeemed, or otherwise acquired for value by the Company (except for acquisitions of Common Stock by the Company pursuant to agreements that permit the Company to repurchase such shares upon termination of services to the Company or in exercise of the Company's right of first refusal upon a proposed transfer) until all dividends (set forth in Section 1(a)) on the Series A Preferred shall have been paid or declared and set apart. So long as any shares of Series A-1 Preferred shall be outstanding, no dividend, whether in cash or property, shall be paid or declared, nor shall any other distribution be made, on Common Stock, nor shall any shares of Common Stock of the Company be purchased, redeemed, or otherwise acquired for value by the Company (except for acquisitions of Common Stock by the Company pursuant to agreements which permit the Company to repurchase such shares upon termination of services to the Company or in exercise of the Company's right of first refusal upon a proposed transfer) until all dividends (set forth in Section 1(a)) on the Series A-1 Preferred shall have been paid or declared and set apart. In the event dividends are paid on any share of Common Stock, an additional dividend shall be paid with respect to all outstanding shares of Preferred Stock in an amount equal per share (on an as-if-converted to Common Stock basis) to the amount paid or set aside for each share of Common Stock. The provisions of this Section 1(b) shall not, however, apply to (i) a dividend payable in Common Stock, or (ii) any repurchase of any outstanding securities of the Company that is approved by the Company's Board of Directors (including the approval of one Series B Director or the Series C Director). The holders of Preferred Stock expressly waive their rights, if any, as described in California Code Sections 502, 503 and 506 as they relate to repurchases of shares upon termination of employment or service as a consultant or director.

VOTING RIGHTS.

(a) General Rights. Except as otherwise provided herein or as required by law, Preferred Stock shall be voted equally with the shares of the Common Stock of the Company and not as a separate class, at any annual or special meeting of stockholders of the Company, and may act by written consent in the same manner as the Common Stock, in either case upon the following basis: each holder of shares of Preferred Stock shall be entitled to such number of votes as shall be equal to the whole number of shares of Common Stock into which such holder's aggregate number of shares of Preferred Stock are convertible (pursuant to Section 4 hereof) immediately after the close of business on the record date fixed for such meeting or the effective date of such written consent.

- (b) Protective Provisions; Separate Vote of Preferred Stock. For so long as at least one million eight hundred thousand (1,800,000) shares of Preferred Stock (subject to adjustment for any stock split, reverse stock split or other similar event affecting the Preferred Stock) remain outstanding, in addition to any other vote or consent required herein or by law, the vote or written consent of the holders of at least sixty-six and two-thirds percent (66 2/3%) of the outstanding shares of Preferred Stock (on as as-if-converted to Common Stock basis) shall be necessary for effecting or validating the following actions:
- (i) Any amendment, alteration, repeal or waiver of any provision of this Certificate of Incorporation or the Bylaws of the Company (including any filing of a Certificate of Designation) that alters or changes the voting or other powers, preferences, or other special rights, privileges or restrictions of the Preferred Stock;
- (ii) Any increase or decrease in the authorized number of shares of Preferred Stock;
- (iii) Any authorization or any designation, whether by reclassification or otherwise, of any new class or series of stock or any other securities convertible into equity securities of the Company ranking on a parity with or senior to the Series C Preferred, Series B Preferred, Series A-1 Preferred or the Series A Preferred or any increase in the authorized or designated number of any such new class or series;
- (Iv) Any redemption, repurchase, payment of dividends or other distributions with respect to Common Stock or Preferred Stock (except for acquisitions of Common Stock by the Company pursuant to any agreements or provisions of the Bylaws of the Company that permit the Company to repurchase such shares upon termination of services to the Company or to exercise the Company's right of first refusal upon a proposed transfer);
- (v) Any agreement by the Company or its stockholders regarding an Asset Transfer or Acquisition (each as defined in Section 3(e)) or the consummation of any merger with any subsidiary of the Company; or
- (vi) Any action that results in the payment or declaration of a dividend on any shares of Common Stock or Preferred Stock.
- (c) Election of Board of Directors. (i) For so long as at least two hundred thousand (200,000) shares of Series A Preferred remain outstanding (subject to adjustment for any stock split, reverse stock split or similar event affecting the Series A Preferred), the holders of Series A Preferred, voting as a separate class, shall be entitled to elect one (1) member of the Company's Board of Directors at each meeting or pursuant to each consent of the Company's stockholders for the election of directors, and to remove from office such directors and to fill arry vacancy caused by the resignation, death or removal of such director; (ii) for so long as at least one million four hundred seventy-eight thousand six hundred sixty-six (1,478,666) shares of Series B Preferred are issued and outstanding (subject to adjustment for any stock split, reverse stock split or similar event affecting the Series B Preferred), the holders of Series B Preferred, voting as a separate class, shall be entitled to elect three (3) members of the Company's Board of Directors (the "Series B Directors") at each

meeting or pursuant to each consent of the Company's stockholders for the election of directors. and to remove from office such directors and to fill any vacancy caused by the resignation, death or removal of such directors; (iii) for so long as at least one million four hundred thousand (1.400,000) shares of Series C Preferred remain outstanding (subject to adjustment for any stock split, reverse stock split or similar event affecting the Series C Preferred), the holders of Series C Preferred, voting as a separate class, shall be entitled to elect two (2) members of the Company's Board of Directors (the "Series C Director") at each meeting or pursuant to each consent of the Company's stockholders for the election of directors, and to remove from office such directors and to fill any vacancy caused by the resignation, death or removal of such director; (iv) the holders of Common Stock, voting as a separate class, shall be entitled to elect one (1) member of the Board of Directors at each meeting or pursuant to each consent of the Company's stockholders for the election of directors, and to remove from office such directors and to fill any vacancy caused by the resignation, death or removal of such directors; and (v) the holders of Common Stock and Preferred Stock, voting together as a single class on an as-if-converted to Common Stock basis, shall be entitled to elect all remaining members of the Board of Directors at each meeting or pursuant to each consent of the Company's stockholders for the election of directors, and to remove from office such directors and to fill any vacancy caused by the resignation, death or removal of such director(s). No person entitled to vote at an election for directors may cumulate votes to which such person is entitled, unless, at the time of such election, the Company is subject to Section 2115 of the California General Corporation Law ("CGCL"). During such time or times that the Company is subject to Section 2115(b) of the CGCL, every stockholder entitled to vote at an election for directors may cumulate such stockholder's votes and give one candidate a number of votes equal to the number of directors to be elected multiplied by the number of votes to which such stockholder's shares are otherwise entitled, or distribute the stockholder's votes on the same principle among as many candidates as such stockholder desires. No stockholder, however, shall be entitled to so cumulate such stockholder's votes unless (i) the names of such candidate or candidates have been placed in nomination prior to the voting and (ii) the stockholder has given notice at the meeting, prior to the voting, of such stockholder's intention to cumulate such stockholder's votes. If any stockholder has given proper notice to cumulate votes, all stockholders may cumulate their votes for any candidates who have been properly placed in nomination. Under cumulative voting, the candidates receiving the highest number of votes, up to the number of directors to be elected, are elected_

(d) Removal.

cumulate votes to which such person is entitled, unless, at the time of such election, the Company is subject to Section 2115 of the California General Corporation Law ("CGCL"). During such time or times that the Company is subject to Section 2115(b) of the CGCL, every stockholder entitled to vote at an election for directors may cumulate such stockholder's votes and give one candidate a number of votes equal to the number of directors to be elected multiplied by the number of votes to which such stockholder's shares are otherwise entitled, or distribute the stockholder's votes on the same principle among as many candidates as such stockholder desires. No stockholder, however, shall be entitled to so cumulate such stockholder's votes unless (i) the names of such candidate or candidates have been placed in

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nomination prior to the voting and (ii) the stockholder has given notice at the meeting, prior to the voting, of such stockholder's intention to cumulate such stockholder's votes. If any stockholder has given proper notice to cumulate votes, all stockholders may cumulate their votes for any candidates who have been properly placed in nomination. Under cumulative voting, the candidates receiving the highest number of votes, up to the number of directors to be elected, are elected.

(ii) During such time or times that the Company is subject to Section 2115(b) of the CGCL, one or more directors may be removed from office at any time without cause by the affirmative vote of the holders of at least a majority of the outstanding shares entitled to vote for that director as provided above; provided, however, that unless the entire Board of Directors is removed, no individual director may be removed when the votes cast against such director's removal, or not consenting in writing to such removal, would be sufficient to elect that director if voted cumulatively at an election that the same total number of votes were cast (or, if such action is taken by written consent, all shares entitled to vote were voted) and the entire number of directors authorized at the time of such director's most recent election were then being elected.

3. LIQUIDATION RIGHTS.

- Upon any liquidation, dissolution or winding up of the Company, **(a)** whether voluntary or involuntary, before any distribution or payment shall be made to the holders of any Series A Preferred, Series A-1 Preferred or Common Stock, the holders of Series C Preferred and Series B Preferred shall be entitled to be paid on a pari passu basis out of the assets of the Company, or the consideration received in such transaction, (i) an amount per share of Series C Preferred equal to the applicable Original Issue Price plus all declared and unpaid dividends on the Series C Preferred (as adjusted for any stock dividends, combinations, splits, recapitalizations and the like with respect to such shares) for each share of Series C Preferred held by them and (ii) an amount per share of Series B Preferred equal to the applicable Original Issue Price plus all declared and unpaid dividends on the Series B Preferred (as adjusted for any stock dividends, combinations, splits, recapitalizations and the like with respect to such shares) for each share of Series B Preferred held by them. If, upon any such liquidation, dissolution or winding up, the assets of the Company shall be insufficient to make payment in full to all holders of Series C Preferred and Series B Preferred of the liquidation preference set forth in this Section 3(a), then such assets legally available for distribution shall be distributed among the holders of Series C Preferred and Series B Preferred at the time outstanding, ratably in proportion to the full amounts to which they would otherwise be respectively entitled.
- Preferred and Series B Preferred as set forth in Section 3(a), before any distribution or payment shall be made to the holders of any Scries A-1 Preferred or Common Stock, the holders of Series A Preferred shall be entitled to be paid out of the assets of the Company, or the consideration received in such transaction, an amount per share of Series A Preferred equal to the applicable Original Issue Price plus all declared and unpaid dividends on the Series A Preferred (as adjusted for any stock dividends, combinations, splits, recapitalizations and the like with respect to such shares) for each share of Series A Preferred held by them. If, upon any such liquidation,

dissolution or winding up, the assets of the Company shall be insufficient to make payment in full to all holders of Series A Preferred of the liquidation preference set forth in this Section 3(b), then such assets legally available for distribution shall be distributed among the holders of Series A Preferred at the time outstanding, ratably in proportion to the full amounts to which they would otherwise be respectively entitled.

- Preferred, Series B Preferred and Series A Preferred as set forth in Sections 3(a) and 3(b) above, before any distribution or payment shall be made to the holders of Common Stock, the holders of Series A-1 Preferred shall be entitled to be paid out of the assets of the Company, or the consideration received in such transaction, an amount per share of Series A-1 Preferred equal to the applicable Original Issue Price plus all declared and unpaid dividends on the Series A-1 Preferred (as adjusted for any stock dividends, combinations, splits, recapitalizations and the like with respect to such shares) for each share of Series A-1 Preferred held by them. If, upon any such liquidation, dissolution or winding up, the assets of the Company shall be insufficient to make payment in full to all holders of Series A-1 Preferred of the liquidation preference set forth in this Section 3(c), then such assets legally available for distribution shall be distributed among the holders of Series A-1 Preferred at the time outstanding, ratably in proportion to the full amounts to which they would otherwise be respectively entitled.
- (d) After the payment of the full liquidation preference of the Preferred Stock as set forth in Sections 3(a), 3(b) and 3(c) above, the remaining assets of the Company legally available for distribution, if any, shall be distributed ratably to the holders of the Common Stock and Preferred Stock on an as-if-converted to Common Stock basis.
- (e) The following events shall be considered a liquidation under this Section:
- any other corporation or other entity or person, or any other corporate reorganization, in which the stockholders of the Company immediately prior to such consolidation, merger or reorganization, own less than fifty percent (50%) of the Company's voting power immediately after such consolidation, merger or reorganization, or any transaction or series of related transactions to which the Company is a party in which in excess of fifty percent (50%) of the Company's voting power is transferred, excluding in each case (A) any consolidation or merger effected exclusively to change the domicile of the Company or (B) any transaction or series of transactions principally for bona fide equity financing purposes in which the Company or any successor receives cash, or indebtedness of the Company is cancelled or converted, or a combination thereof (an "Acquisition"); or
- (ii) a sale, lease, exclusive license or other disposition of all or substantially all of the assets of the Company (an "Asset Transfer").
- (f) For the purposes of this Section 3, if the consideration received by the Company is other than cash, its value will be deemed its fair market value as determined in good faith by the Board of Directors. Any securities shall be valued as follows:

- (i) Securities not subject to investment letter or other similar restrictions on free marketability covered by (ii) below:
- (A) If traded on a securities exchange or through the Nasdaq National Market, the value shall be deemed to be the average of the closing prices of the securities on such quotation system over the thirty (30) day period ending three (3) days prior to the closing;
- (B) If actively traded over-the-counter, the value shall be deemed to be the average of the closing bid or sale prices (whichever is applicable) over the thirty (30) day period ending three (3) days prior to the closing; and
- (C) If there is no active public market, the value shall be the fair market value thereof, as mutually determined by the Board of Directors and the holders of at least sixty-six and two-thirds percent (66 2/3%) of the voting power of all then outstanding shares of Preferred Stock.
- (ii) The method of valuation of securities subject to investment letter or other restrictions on free marketability (other than restrictions arising solely by virtue of a stockholder's status as an affiliate or former affiliate) shall be to make an appropriate discount from the market value determined as above in (i) (A), (B) or (C) to reflect the approximate fair market value thereof, as mutually determined by the Board of Directors and the holders of at least a majority of the voting power of all then outstanding shares of Preferred Stock.

4. Conversion Rights.

The holders of Preferred Stock shall have the following rights with respect to the conversion of Preferred Stock into shares of Common Stock (the "Conversion Rights"):

- (a) Optional Conversion. Subject to and in compliance with the provisions of this Section 4, any shares of Preferred Stock may, at the option of the holder, be converted at any time into fully-paid and nonassessable shares of Common Stock. The number of shares of Common Stock to which a holder of Preferred Stock shall be entitled upon conversion shall be the product obtained by multiplying the applicable "Preferred Stock Conversion Rate" then in effect (determined as provided in Section 4(b)) by the number of shares of Preferred Stock, as applicable, being converted.
- (b) Preferred Stock Conversion Rate. The conversion rate in effect at any time for conversion of Preferred Stock (the "Preferred Stock Conversion Rate") shall be the quotient obtained by dividing the applicable Original Issue Price of the Preferred Stock by the applicable "Preferred Stock Conversion Price," calculated as provided in Section 4(c).
- (c) Preferred Stock Conversion Price. The conversion price for each series of Preferred Stock shall initially be the applicable Original Issue Price of such series of Preferred Stock (the "Preferred Stock Conversion Price"). Such initial Preferred Stock Conversion Price shall be adjusted from time to time in accordance with this Section 4. All

references to Preferred Stock Conversion Price herein shall mean Preferred Stock Conversion Price as so adjusted, for the applicable series.

- Mechanics of Conversion. Each holder of Preferred Stock who desires to convert the same into shares of Common Stock pursuant to this Section 4 shall surrender the certificate or certificates therefor, duly endorsed, at the office of the Company or any transfer agent for the Preferred Stock, and shall give written notice to the Company at such office that such holder elects to convert the same. Such notice shall state the number of shares of Preferred Stock being converted. Thereupon, the Company shall promptly issue and deliver at such office to such holder a certificate or certificates for the number of shares of Common Stock to which such holder is entitled and shall promptly pay (i) in cash or, to the extent sufficient funds are not then legally available therefor, in Common Stock (at the Common Stock's fair market value determined by the Board of Directors as of the date of such conversion), any declared and unpaid dividends on the shares of Preferred Stock being converted and (ii) in cash (at the Common Stock's fair market value determined by the Board of Directors as of the date of conversion) the value of any fractional share of Common Stock otherwise issuable to any holder of Preferred Stock. Such conversion shall be deemed to have been made at the close of business on the date of such surrender of the certificates representing the shares of Preferred Stock to be converted, and the person entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder of such shares of Common Stock on such date.
- (e) Adjustment for Stock Splits and Combinations. If the Company shall at any time or from time to time after the date that the first share of Series C Preferred is issued (the "Original Issue Date") effect a subdivision of the outstanding Common Stock without a corresponding subdivision of Preferred Stock, the applicable Preferred Stock Conversion Price in effect immediately before that subdivision shall be proportionately decreased. Conversely, if the Company shall at any time or from time to time after the Original Issue Date combine the outstanding shares of Common Stock into a smaller number of shares without a corresponding combination of Preferred Stock, the applicable Preferred Stock Conversion Price in effect immediately before the combination shall be proportionately increased. Any adjustment under this Section 4(e) shall become effective at the close of business on the date the subdivision or combination becomes effective.
- If the Company at any time or from time to time after the Original Issue Date makes, or fixes a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in additional shares of Common Stock, in each such event the applicable Preferred Stock Conversion Price that is then in effect shall be decreased as of the time of such issuance or, in the event such record date is fixed, as of the close of business on such record date, by multiplying the applicable Preferred Stock Conversion Price then in effect by a fraction (i) the numerator of which is the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, and (ii) the denominator of which is the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date plus the number of shares of Common Stock issuable in payment of such

dividend or distribution; provided, however, that if such record date is fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the applicable Preferred Stock Conversion Price shall be recomputed accordingly as of the close of business on such record date and thereafter the applicable Preferred Stock Conversion Price shall be adjusted pursuant to this Section 4(f) to reflect the actual payment of such dividend or distribution.

- at any time or from time to time after the Original Issue Date, the Common Stock issuable upon the conversion of Preferred Stock is changed into the same or a different number of shares of any class or classes of stock, whether by recapitalization, reclassification or otherwise (other than an Acquisition or Asset Transfer as defined in Section 3(e) or a subdivision or combination of shares or stock dividend or a reorganization, merger, consolidation or sale of assets provided for elsewhere in this Section 4), in any such event each holder of Preferred Stock shall have the right thereafter to convert such stock into the kind and amount of stock and other securities and property receivable upon such recapitalization, reclassification or other change by holders of the maximum number of shares of Common Stock into which such shares of Preferred Stock could have been converted immediately prior to such recapitalization, reclassification or change, all subject to further adjustment as provided herein or with respect to such other securities or property by the terms thereof.
- Reorganizations, Mergers or Consolidations. If at any time or (h) from time to time after the Original Issue Date, there is a capital reorganization of the Common Stock or the merger or consolidation of the Company with or into another corporation or another entity or person (other than an Acquisition or Asset Transfer as defined in Section 3(e) or a recapitalization, subdivision, combination, reclassification, exchange or substitution of shares provided for elsewhere in this Section 4), as a part of such capital reorganization, provision shall be made so that the holders of Preferred Stock shall thereafter be entitled to receive upon conversion of Preferred Stock the number of shares of stock or other securities or property of the Company to which a holder of the number of shares of Common Stock deliverable upon conversion would have been entitled on such capital reorganization, subject to adjustment in respect of such stock or securities by the terms thereof. In any such case, appropriate adjustment shall be made in the application of the provisions of this Section 4 with respect to the rights of the holders of Preferred Stock after the capital reorganization to the end that the provisions of this Section 4 (including adjustment of the applicable Preferred Stock Conversion Price then in effect and the number of shares issuable upon conversion of Preferred Stock) shall be applicable after that event and be as nearly equivalent as practicable.

(i) Sale of Shares Below Preferred Stock Conversion Price.

(i) If at any time or from time to time after the effective date of this Certificate of Incorporation, the Company issues or sells, or is deemed by the express provisions of this subsection (i) to have issued or sold, Additional Shares of Common Stock (as defined in subsection (i)(iv) below), other than as a dividend or other distribution on any class of stock as provided in Section 4(f), and other than a subdivision or combination of shares of Common Stock as provided in Section 4(e), for an Effective Price (as defined in subsection (i)(iv) below) less than the then effective applicable Preferred Stock Conversion Price (a

"Qualifying Dilutive Issuance"), then and in each such case the then existing applicable Preferred Stock Conversion Price shall be reduced, as of the opening of business on the date of such issue or sale, to a price determined by multiplying the applicable Preferred Stock Conversion Price by a fraction (i) the numerator of which shall be (A) the number of shares of Common Stock deemed outstanding (as defined below) immediately prior to such issue or sale, plus (B) the number of shares of Common Stock that the aggregate consideration received (as defined in subsection (i)(ii)) by the Company for the total number of Additional Shares of Common Stock so issued would purchase at such applicable Preferred Stock Conversion Price, and (ii) the denominator of which shall be the number of shares of Common Stock deemed outstanding (as defined below) immediately prior to such issue or sale plus the total number of Additional Shares of Common Stock so issued. For the purposes of the preceding sentence, the number of shares of Common Stock deemed to be outstanding as of a given date shall be the sum of (A) the number of shares of Common Stock actually outstanding, (B) the number of shares of Common Stock into which the then outstanding shares of Preferred Stock could be converted if fully converted on the day immediately preceding the given date and (C) the number of shares of Common Stock that could be obtained through the exercise or conversion of all other rights, options and convertible securities outstanding on the day immediately preceding the given date. No adjustment shall be made to the Preferred Stock Conversion Price in an amount less than one cent per share. Any adjustment otherwise required by this Section 4(i) that is not required to be made due to the preceding sentence shall be included in any subsequent adjustment to Preferred Stock Conversion Price.

(ii) For the purpose of making any adjustment required under this Section 4(i), the consideration received by the Company for any issue or sale of securities shall (A) to the extent it consists of cash, be computed at the net amount of cash received by the Company after deduction of any underwriting or similar commissions, compensation or concessions paid or allowed by the Company in connection with such issue or sale but without deduction of any expenses payable by the Company, (B) to the extent it consists of consideration other than cash, be computed at the fair value of that consideration as determined in good faith by the Board of Directors, and (C) if Additional Shares of Common Stock, Convertible Securities (as defined in subsection (i)(iii)) or rights or options to purchase either Additional Shares of Common Stock or Convertible Securities are issued or sold together with other stock or securities or other assets of the Company for a consideration that covers both, be computed as the portion of the consideration so received that may be reasonably determined in good faith by the Board of Directors to be allocable to such Additional Shares of Common Stock, Convertible Securities or rights or options.

(iii) For the purpose of the adjustment required under this Section 4(i), if the Company issues or sells (i) stock or other securities convertible into, Additional Shares of Common Stock (such convertible stock or securities being herein referred to as "Convertible Securities") or (ii) rights or options for the purchase of Additional Shares of Common Stock or Convertible Securities and if the Effective Price of such Additional Shares of Common Stock is less than the applicable Preferred Stock Conversion Price, in each case the Company shall be deemed to have issued at the time of the issuance of such rights or options or Convertible Securities the maximum number of Additional Shares of Common Stock issuable upon exercise or conversion thereof and to have received as consideration for the issuance of

such shares an amount equal to the total amount of the consideration, if any, received by the Company for the issuance of such rights or options or Convertible Securities, plus, in the case of such rights or options, the minimum amounts of consideration, if any, payable to the Company upon the exercise of such rights or options, plus, in the case of Convertible Securities, the minimum amounts of consideration, if any, payable to the Company (other than by cancellation of liabilities or obligations evidenced by such Convertible Securities) upon the conversion thereof; provided, however, that:

(a) if in the case of Convertible Securities the minimum amounts of such consideration cannot be ascertained, but are a function of antidilution or similar protective clauses, the Company shall be deemed to have received the minimum amounts of consideration without reference to such clauses;

(b) if the minimum amount of consideration payable to the Company upon the exercise or conversion of rights, options or Convertible Securities is reduced over time or on the occurrence or non-occurrence of specified events other than by reason of antidilution adjustments, the Effective Price shall be recalculated using the figure to which such minimum amount of consideration is reduced; and

(c) if the minimum amount of consideration payable to the Company upon the exercise or conversion of such rights, options or Convertible Securities is subsequently increased, the Effective Price shall be again recalculated using the increased minimum amount of consideration payable to the Company upon the exercise or conversion of such rights, options or Convertible Securities.

No further adjustment of the applicable Preferred Stock Conversion Price, as adjusted upon the issuance of such rights, options or Convertible Securities, shall be made as a result of the actual issuance of Additional Shares of Common Stock on the exercise of any such rights or options or the conversion of any such Convertible Securities. If any such rights or options or the conversion privilege represented by any such Convertible Securities shall expire without having been exercised, the applicable Preferred Stock Conversion Price as adjusted upon the issuance of such rights, options or Convertible Securities shall be readjusted to the applicable Preferred Stock Conversion Price that would have been in effect had an adjustment been made on the basis that the only Additional Shares of Common Stock so issued were the Additional Shares of Common Stock, if any, actually issued or sold on the exercise of such rights or options or rights of conversion of such Convertible Securities, and such Additional Shares of Common Stock, if any, were issued or sold for the consideration actually received by the Company upon such exercise, plus the consideration, if any, actually received by the Company for the granting of all such rights or options, whether or not exercised, plus the consideration received for issuing or selling the Convertible Securities actually converted, plus the consideration, if any, actually received by the Company (other than by cancellation of liabilities or obligations evidenced by such Convertible Securities) on the conversion of such Convertible Securities; provided, however, that such readjustment shall not apply to prior conversions of Preferred Stock.

(iv) "Additional Shares of Common Stock" shall mean all shares of Common Stock issued by the Company or deemed to be issued pursuant to this

Section 4(i), whether or not subsequently reacquired or retired by the Company other than the securities described below, which shall be known as the "Excluded Securities"):

(A) shares of Common Stock issued upon conversion of

Preferred Stock;

(B) shares of Common Stock and/or options, warrants or other Common Stock purchase rights, and the Common Stock issued pursuant to such options, warrants or other rights (as adjusted for any stock dividends, combinations, splits, recapitalizations and the like) after the Original Issue Date to employees, officers or directors of, or consultants or advisors to the Company or any subsidiary pursuant to the Company's equity incentive plan to be adopted by the Board of Directors (which adoption and the exclusion of such shares from the effects of this Section 4(i) includes the approval of at least one of the Series B Directors or the Series C Director), as it may be amended from time to time;

(C) shares of Common Stock issued pursuant to the exercise of options, warrants or convertible securities outstanding as of the Original Issue Date;

(D) shares of Common Stock issued for consideration other than cash pursuant to a merger, consolidation, acquisition, strategic alliance or similar business combination that has been approved by the Company's Board of Directors (which approvals for such transaction and the exclusion of such shares from the effects of this Section 4(i) shall include at least one of the Series B Directors or the Series C Director) and that has been approved in writing by the holders of a majority of the Preferred Stock (on an as-if-converted to Common Stock basis);

(E) shares of Common Stock, warrants or options issued pursuant to any equipment loan or leasing arrangement, real property leasing arrangement or debt financing from a bank or similar financial institution approved by the Company's Board of Directors (which approvals for such transaction and the exclusion of such shares from the effects of this Section 4(i) shall include at least one of the Series B Directors or the Series C Director);

(F) shares of Common Stock, warrants or options issued in connection with strategic transactions involving the Company and other entities, including (i) joint ventures, manufacturing, marketing or distribution arrangements or (ii) technology transfer or development arrangements; provided, however, that such issuance of shares and their exclusion from the effects of this Section 4(i) have been approved by the Company's Board of Directors (including at least one of the Series B Directors or the Series C Director); and

(G) shares of Series C Preferred and warrants to purchase Series C Preferred.

References to Common Stock in this subsection (iv) shall mean all shares of Common Stock issued by the Company or deemed to be issued pursuant to this Section 4(i).

The "Effective Price" of Additional Shares of Common Stock shall mean the quotient determined by dividing the total number of Additional Shares of Common Stock issued or sold, or deemed to have been issued or sold by the Company under this Section 4(i), into the aggregate consideration received, or deemed to have been received by the Company for such issue under this Section 4(i), for such Additional Shares of Common Stock.

- (v) In the event that the Company issues or sells, or is deemed to have issued or sold, Additional Shares of Common Stock in a Qualifying Dilutive Issuance (the "First Dilutive Issuance"), then in the event that the Company issues or sells, or is deemed to have issued or sold, Additional Shares of Common Stock in a Qualifying Dilutive Issuance other than the First Dilutive Issuance as a part of the same transaction or series of related transactions as the First Dilutive Issuance (a "Subsequent Dilutive Issuance"), then and in each such case upon a Subsequent Dilutive Issuance the Preferred Stock Conversion Price shall be reduced to the Preferred Stock Conversion Price that would have been in effect had the First Dilutive Issuance and each Subsequent Dilutive Issuance all occurred on the closing date of the First Dilutive Issuance.
- readjustment of the applicable Preferred Stock Conversion Price for the number of shares of Common Stock or other securities issuable upon conversion of Preferred Stock, if Preferred Stock is then convertible pursuant to this Section 4, the Company, at its expense, shall compute such adjustment or readjustment in accordance with the provisions hereof and prepare a certificate showing such adjustment or readjustment, and shall mail such certificate, by first class mail, postage prepaid, to each registered holder of Preferred Stock at the holder's address as shown in the Company's books. The certificate shall set forth such adjustment or readjustment, showing in detail the facts upon which such adjustment or readjustment is based, including a statement, as applicable, of (i) the consideration received or deemed to be received by the Company for any Additional Shares of Common Stock issued or sold or deemed to have been issued or sold, (ii) the applicable Preferred Stock Conversion Price at the time in effect, (iii) the number of Additional Shares of Common Stock and (iv) the type and amount, if any, of other property that at the time would be received upon conversion of the Preferred Stock.
- (k) Notices of Record Date. Upon (i) any taking by the Company of a record of the holders of any class of securities for the purpose of determining the holders thereof who are entitled to receive any dividend or other distribution, or (ii) any Acquisition (as defined in Section 3(e)) or other capital reorganization of the Company, any reclassification or recapitalization of the capital stock of the Company, any merger or consolidation of the Company with or into any other corporation, or any Asset Transfer (as defined in Section 3(e)), or any voluntary or involuntary dissolution, liquidation or winding up of the Company, the Company shall mail to each holder of Preferred Stock at least ten (10) days prior to the record date specified therein (or such shorter period approved by a majority of the outstanding Preferred Stock) a notice specifying (A) the date on which any such record is to be taken for the purpose of such dividend or distribution and a description of such dividend or distribution, (B) the date upon which any such Acquisition, reorganization, reclassification, transfer, consolidation, merger, Asset Transfer, dissolution, liquidation or winding up is expected to become effective, and (C) the date, if any, that is to be fixed as to when the holders of record of Common Stock (or

other securities) shall be entitled to exchange their shares of Common Stock (or other securities) for securities or other property deliverable upon such Acquisition, reorganization, reclassification, transfer, consolidation, merger, Asset Transfer, dissolution, liquidation or winding up.

(I) Automatic Conversion.

(i) Hach share of Preferred Stock shall automatically be converted into shares of Common Stock, based on the then-effective applicable Preferred Stock Conversion Price, (A) at any time upon the affirmative election of the holders of at least a majority of the outstanding shares of Preferred Stock, or (B) immediately upon the closing of a firmly underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended, covering the offer and sale of Common Stock for the account of the Company in which (i) the per share price is at least twelve dollars and fifty-two cents (\$12.52) (as adjusted for stock splits, dividends, recapitalizations and the like), and (ii) the gross cash proceeds to the Company (before underwriting discounts, commissions and fees) are at least thirty million dollars (\$30,000,000). Upon such automatic conversion, any declared and unpaid dividends shall be paid in accordance with the provisions of Section 4(d).

Upon the occurrence of either of the events specified in **(i)** Section 4(1)(i) above, the outstanding shares of Preferred Stock shall be converted automatically without any further action by the holders of such shares and whether or not the certificates representing such shares are surrendered to the Company or its transfer agent; provided, however, that the Company shall not be obligated to issue certificates evidencing the shares of Common Stock issuable upon such conversion unless the certificates evidencing such shares of Preferred Stock are either delivered to the Company or its transfer agent as provided below, or the holder notifies the Company or its transfer agent that such certificates have been lost, stolen or destroyed and executes an agreement satisfactory to the Company to indemnify the Company from any loss incurred by it in connection with such certificates. Upon the occurrence of such automatic conversion of Preferred Stock, the holders of Preferred Stock shall surrender the certificates representing such shares at the office of the Company or any transfer agent for the Preferred Stock. Thereupon, there shall be issued and delivered to such holder promptly at such office and in its name as shown on such surrendered certificate or certificates, a certificate or certificates for the number of shares of Common Stock into which the shares of Preferred Stock surrendered were convertible on the date upon which such automatic conversion occurred, and any declared and unpaid dividends shall be paid in accordance with the provisions of Section 4(d).

(m) Fractional Shares. No fractional shares of Common Stock shall be issued upon conversion of Preferred Stock. All shares of Common Stock (including fractions thereof) issuable upon conversion of more than one share of Preferred Stock by a holder thereof shall be aggregated for purposes of determining whether the conversion would result in the issuance of any fractional share. If, after the aforementioned aggregation, the conversion would result in the issuance of any fractional share, the Company shall, in lieu of issuing any fractional share, pay cash equal to the product of such fraction multiplied by the Common Stock's fair market value (as determined by the Board of Directors) on the date of conversion.

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- (n) Reservation of Stock Issuable Upon Conversion. The Company shall at all times reserve and keep available out of its authorized but unissued shares of Common Stock, solely for the purpose of effecting the conversion of the shares of Preferred Stock, such number of its shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding shares of Preferred Stock. If at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of Preferred Stock, the Company will take such corporate action as may, in the opinion of its counsel, be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purpose.
- shall be in writing and shall be deemed effectively given: (i) upon personal delivery to the party to be notified, (ii) when sent by confirmed electronic mail or facsimile if sent during normal business hours of the recipient; if not, then on the next business day, (iii) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid, or (iv) one (1) day after deposit with a nationally recognized overnight courier, specifying next day delivery, with verification of receipt. All notices shall be addressed to each holder of record at the address of such holder appearing on the books of the Company.
- (p) Payment of Taxes. The Company will pay all taxes (other than taxes based upon income) and other governmental charges that may be imposed with respect to the issue or delivery of shares of Common Stock upon conversion of shares of Preferred Stock, excluding any tax or other charge imposed in connection with any transfer involved in the issue and delivery of shares of Common Stock in a name other than that in which the shares of Preferred Stock so converted were registered.
- of the outstanding Preferred Stock as required under Section 2(b), the Company shall not amend its Certificate of Incorporation or participate in any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or take any other voluntary action, for the purpose of avoiding or seeking to avoid the observance or performance of any of the terms to be observed or performed hereunder by the Company, but shall at all times in good faith assist in carrying out all such action as may be reasonably necessary or appropriate in order to protect the conversion rights of the holders of Preferred Stock against dilution or other impairment.

5. SPECIAL MANDATORY CONVERSION.

- (a) Special Mandatory Conversion. In the event that a holder of Series C Preferred is a Non-Participating Purchaser (as defined in that certain Series C Preferred Stock Purchase Agreement between the Company and the purchasers of the Series C Preferred), each share of such holder's Series C Preferred shall be automatically and without further action on the part of such holder be converted into Common Stock at the "Preferred Stock Conversion Rate," then in effect.
- (b) Delivery of Certificates. The holder of any shares of Series C Preferred converted pursuant to Section D.5 shall deliver to the Company during regular

business hours at the office of any transfer agent of the Company for the Series C Preferred, or at such other place as may be designated by the Company, the certificate or certificates representing the shares so converted, duly endorsed or assigned in blank or to the Company. As promptly thereafter as practicable, the Company shall issue and deliver to such holder, at the place designated by the holder, a certificate or certificates for the number of shares of Common Stock to which such holder is entitled. The person in whose name the certificate for such shares of Common Stock is to be issued shall be deemed to have become a shareholder of record of such shares on the date such holder becomes a Non-Participating Purchaser (as defined above).

V

- A. The liability of the directors for monetary damages shall be eliminated to the fullest extent under applicable law.
- B. The Company is authorized to provide indemnification of agents (as defined in Section 317 of the CGCL) for breach of duty to the Company and its stockholders through bylaw provisions or through agreements with the agents, or through stockholder resolutions, or otherwise, in excess of the indemnification otherwise permitted by Section 317 of the CGCL, subject, at any time or times that the Company is subject to Section 2115(b) of the CGCL, to the limits on such excess indemnification set forth in Section 204 of the CGCL.
- Each person who is or is made a party or is threatened to be made a party to or is C. involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative (hereinafter a "proceeding"), by reason of the fact that he or she, or a person of whom he or she is the legal representative, is or was a director or officer of the Company or is or was serving at the request of the Company as a director, officer, employee or agent of another corporation or of a partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans, whether the basis of such proceeding is alleged action in an official capacity as a director, officer, employee or agent or in any other capacity while serving as a director, officer, employee or agent, shall be indemnified and held harmless by the Company to the fullest extent authorized by the Delaware General Corporation Law, as the same exists or may hereafter be amended (but, in the case of any such amendment, only to the extent that such amendment permits the Company to provide broader indemnification rights than the law permitted the Company to provide prior to such amendment), against all expense, liability and loss (including attorneys' fees, judgments, fines, Employee Retirement Income Security Act excise taxes or penalties and amounts paid or to be paid in settlement) reasonably incurred or suffered by such person in connection therewith and such indemnification shall continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of his or her heirs, executors and administrators; provided, however, that, except as provided in the second paragraph hereof, the Company shall indemnify any such person seeking indemnification in connection with a proceeding (or part thereof) initiated by such person only if such proceeding (or part thereof) was authorized by the Board of Directors. The right to indemnification conferred in this section shall be a contract right and shall include the right to be paid by the Company any expenses incurred in defending any such proceeding in advance of its final disposition; provided, however, that, if the Delaware General Corporation Law requires, the payment of such expenses incurred by a director or officer in his or her capacity as a director or

officer (and not in any other capacity in which service was or is rendered by such person while a director or officer, including, without limitation, service to an employee benefit plan) in advance of the final disposition of a proceeding, shall be made only upon delivery to the Company of an undertaking, by or on behalf of such director or officer, to repay all amounts so advanced if it shall ultimately be determined that such director or officer is not entitled to be indemnified under this section or otherwise. The Company may, by action of its Board of Directors, provide indemnification to employees and agents of the Company with the same scope and effect as the foregoing indemnification of directors and officers.

If a claim under the first paragraph of this section is not paid in full by the Company within thirty (30) days after a written claim has been received by the Company, the claimant may at any time thereafter bring suit against the Company to recover the unpaid amount of the claim and, if successful in whole or in part, the claimant shall be entitled to be paid also the expense of prosecuting such claim. It shall be a defense to any such action (other than an action brought to enforce a claim for expenses incurred in defending any proceeding in advance of its final disposition where the required undertaking, if any is required, has been tendered to the Company) that the claimant has not met the standards of conduct that make it permissible under the Delaware General Corporation Law for the Company to indemnify the claimant for the amount claimed, but the burden of proving such defense shall be on the Company. Neither the failure of the Company (including its Board of Directors, independent legal counsel, or its stockholders) to have made a determination prior to the commencement of such action that indemnification of the claimant is proper in the circumstances because he or she has met the applicable standard of conduct set forth in the Delaware General Corporation Law, nor an actual determination by the Company (including its Board of Directors, independent legal counsel, or its stockholders) that the claimant has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that the claimant has not met the applicable standard of conduct.

The right to indemnification and the payment of expenses incurred in defending a proceeding in advance of its final disposition conferred in this section shall not be exclusive of any other right that any person may have or hereafter acquire under any statute, provision of this Certificate of Incorporation, Bylaw, agreement, vote of stockholders or disinterested directors or otherwise.

- D. The Company may maintain insurance, at its expense, to protect itself and any director, officer, employee or agent of the Company or another corporation, partnership, joint venture, trust or other enterprise against any such expense, liability or loss, whether or not the Company would have the power to indemnify such person against such expense, liability or loss under the Delaware General Corporation Law.
- E. Any repeal or modification of this Article V shall only be prospective and shall not effect the rights under this Article V in effect at the time of the alleged occurrence of any action or omission to act giving rise to liability.

For the management of the business and for the conduct of the affairs of the Company, and in further definition, limitation and regulation of the powers of the Company, of its directors and of its stockholders or any class thereof, as the case may be, it is further provided that:

- A. The management of the business and the conduct of the affairs of the Company shall be vested in its Board of Directors. The number of directors that shall constitute the whole Board of Directors shall be fixed by the Board of Directors in the manner provided in the Bylaws, subject to any restrictions that may be set forth in this Certificate of Incorporation.
- B. Subject to compliance with applicable protective voting rights that have been or may be granted to the Preferred Stock or series thereof in a Certificate of Designation or this Certificate of Incorporation and to the indemnification provisions in the Bylaws, the Board of Directors may from time to time make, amend, supplement or repeal the Bylaws; provided, however, that the stockholders may change or repeal any Bylaw adopted by the Board of Directors by the affirmative vote of the percentage of holders of capital stock as provided therein; and, provided further, that no amendment or supplement to the Bylaws adopted by the Board of Directors shall vary or conflict with any amendment or supplement thus adopted by the stockholders.
- C. The directors of the Company need not be elected by written ballot unless the Bylaws so provide.

VII.

Subject to the rights of holders of Preferred Stock set forth in Section 2(b), the Company reserves the right to amend, alter, change or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute, and all rights conferred upon the stockholders herein are granted subject to this reservation.

ONE: This Amended and Restated Certificate of Incorporation has been duly approved by the Board of Directors of the Company.

TWO: This Amended and Restated Certificate of Incorporation has been duly adopted in accordance with the provisions of Sections 228, 242 and 245 of the DGCL by the stockholders of the Company. The total number of outstanding shares entitled to vote or act by written consent was 167,691 shares of Common Stock, 486,663 shares of Series A Preferred Stock, 340,000 shares of Series A-1 Preferred Stock, and 6,006,070 shares of Series B Preferred Stock. A majority of the outstanding shares of Common Stock and Preferred Stock approved this Amended and Restated Certificate of Incorporation by written consent in accordance with Section 228 of the DGCL and prompt written notice of such was given by the Company in accordance with said Section 228 to those stockholders who did not approve this Amended and Restated Certificate of Incorporation by written consent.

IN WITNESS WHEREOF, this Certificate has been subscribed this 4th day of May, 2006 by the undersigned who affirms that the statements made herein are true and correct.

By:

Peter Van Vlasselaer, Ph.D.

Chief Executive Officer