

**AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION
OF
AKERMIN, INC.**

The undersigned, being the President and Chief Executive Officer of Akermin, Inc., a corporation organized and existing under the Delaware General Corporation Law ("DGCL"), does hereby certify that:

1. The name of the corporation is Akermin, Inc. The Certificate of Incorporation of Akermin, Inc. was originally filed with the Secretary of State of the State of Delaware on March 2, 2006.
2. This Amended and Restated Certificate of Incorporation of Akermin, Inc. has been duly adopted in accordance with the provisions of Sections 228, 242 and 245 of the DGCL and written notice of the adoption of this Amended and Restated Certificate of Incorporation has been given as provided by Section 228 of the DGCL to the stockholders entitled to such notice.
3. The text of the Certificate of Incorporation of the Corporation is hereby amended and restated to read in its entirety as follows:

FIRST. The name of the Corporation is Akermin, Inc.

SECOND. The address of its registered office in the State of Delaware is Corporation Trust Center, 1209 Orange Street, City of Wilmington, County of New Castle, State of Delaware 19801. The name of its registered agent at such address is The Corporation Trust Company.

THIRD. The nature of the business or the objects or purposes to be conducted or promoted by the Corporation are to engage in any part of the world and in any capacity in any lawful act or activity for which corporations may be organized under the DGCL as now in force or as hereafter amended and to possess, exercise and enjoy all the powers, rights and privileges granted by the DGCL, together with any lawful powers, rights and privileges incidental thereto.

FOURTH.

A. Classes and Number of Shares. The aggregate number of shares of capital stock which the Corporation is authorized to issue is two hundred forty two million (242,000,000) shares, consisting of:

- (i) one hundred thirty five million one hundred sixty four thousand three hundred ninety eight (135,164,398) shares of common stock, par value \$0.005 per share ("Common Stock"); and
- (ii) one hundred six million eight hundred thirty five thousand six hundred two (106,835,602) shares of preferred stock, par value \$0.005 per share ("Preferred Stock").

B. Terms of Preferred Stock.

1. **Authorized Shares.** The Preferred Stock authorized by this Amended and Restated Certificate of Incorporation may be issued from time to time in one or more series. Three series of the Corporation's Preferred Stock be and they are hereby created, pursuant to which eighteen million eight hundred thirty five thousand six hundred two (18,835,602) shares of the Preferred Stock shall be designated "Series A Preferred Stock", forty eight million (48,000,000) shares of the Preferred Stock shall be designated as "Series B-1 Preferred Stock", and twenty four million (24,000,000) shares of the Preferred Stock shall be designated as "Series B-2 Preferred Stock." The remaining sixteen million (16,000,000) shares of Preferred Stock may be designated by the Board of Directors as either Series B-1 Preferred Stock or Series B-2 Preferred Stock. References herein to "Series B Preferred Stock" shall include Series B-1 Preferred Stock and Series B-2 Preferred Stock. The rights, preferences, privileges and restrictions granted to and imposed on the Series A Preferred Stock and Series B Preferred Stock are as set forth below.

2. **Preferred Stock.** The preferences and relative, participating, optional and other special rights of Preferred Stock, and the qualifications, limitations and restrictions thereof, are as follows:

(i) **Dividends.** The holders of shares of the Preferred Stock and Common Stock shall not be entitled to receive any fixed dividends thereon. Out of any assets legally available therefor, non-cumulative cash or other types of dividends (other than fixed dividends) may be declared and paid upon outstanding shares of Series B Preferred Stock at such times as the Corporation's Board of Directors ("Board of Directors") may determine, whether or not any dividends are declared and paid upon Series A Preferred Stock or Common Stock. Any such dividends shall be payable at a rate equal to (a) 8.00% of the Original Issue Price (as defined below) on each outstanding share of Series B Preferred Stock (as adjusted for stock splits, stock dividends, reclassification and the like) per annum as is determined by the Board of Directors, which determination shall require the approval of each of the Series B Directors. For purposes of this Amended and Restated Certificate of Incorporation, the "Original Issue Price" with respect to shares of Series B-1 Preferred Stock shall equal \$0.138 per share and with respect to shares of Series A Preferred Stock shall equal \$0.415702 per share (each as adjusted for stock splits, stock dividends, reclassification and the like). With respect to Series B-2 Preferred Stock, the "Original Issue Price" shall equal \$0.1725 per share (as adjusted for stock splits, stock dividends, reclassification and the like); provided, however that if at the time of the Second Closing (as defined in the Securities Purchase Agreement dated on or about December 30, 2009, by and among the Corporation and the other parties thereto, as amended, if amended, from time-to-time ("Securities Purchase Agreement")) the Company has been awarded one or more U.S. Department of Energy grant(s) in the aggregate amount of \$2,000,000 or more, then the "Original Issue Price" with respect to shares of Series B-2 Preferred Stock shall be \$0.207 per share (as adjusted for stock splits, stock dividends, reclassification and the like). Notwithstanding the foregoing, unless an 8.00% dividend on the Series B Preferred Stock as described above shall have been paid or declared and a sum sufficient for the payment thereof set apart, no dividend shall be paid or declared, and no distribution shall be made, on any Series A Preferred Stock or Common Stock. After payment of such dividend on the Series B Preferred Stock, any declared dividends on the Series A Preferred Stock shall be distributed among the holders of Series A Preferred Stock pro rata based on the number of shares of Series A Preferred Stock held by each holder. After payment of any dividend declared on the Series A Preferred Stock, any additional dividends shall be distributed among the holders of Preferred Stock and Common Stock pro rata based on the number of shares of Common Stock then held by each holder (assuming conversion of all such series of Preferred Stock into Common Stock).

(ii) Liquidation Rights.

(a) In the event of any liquidation, dissolution or winding up of the Corporation or other distribution of assets of the Corporation among its shareholders for the purpose of winding-up the Corporation's affairs, whether voluntary or involuntary (each a "Dissolution Event"), each holder of shares of the Series B Preferred Stock shall be entitled to receive, prior and in preference to any distribution of any of the assets or surplus funds of the Corporation to the holders of the Series A Preferred Stock or Common Stock or any other security ranking junior to the Series B Preferred Stock as to liquidation, distributions in cash, securities or other property (valued as provided in paragraph (e) of this Section Fourth.B.2(ii)) in an amount equal to the Original Issue Price for each outstanding share of Series B Preferred Stock then held by such holder (as adjusted for any stock dividends, combinations, reverse stock splits, stock splits, recapitalizations, reorganizations, reclassifications or other similar event with respect to shares), plus all declared, but unpaid dividends thereon (such Original Issue Price as adjusted (if applicable) and unpaid dividends together, the "Series B Preference Amount"). If upon the occurrence of a Dissolution Event, the assets and funds legally available for distribution among the holders of the Series B Preferred Stock shall be insufficient to permit the payment to such holders of the full Series B Preference Amount, then the entire assets and funds of the Corporation legally available for distribution shall be distributed ratably among the holders of Series B Preferred Stock in proportion to the full Series B Preference Amount each such holder is otherwise entitled to receive.

(b) After the payment to the holders of Series B Preferred Stock of the full Series B Preference Amount, each holder of shares of the Series A Preferred Stock shall be entitled to receive, prior and in preference to any distribution of any of the assets or surplus funds of the Corporation to the holders of the Series A Preferred Stock or Common Stock or any other security ranking junior to the Series A Preferred Stock as to liquidation, distributions in cash, securities or other property (valued as provided in paragraph (e) of this Section Fourth.B.2(ii)) in an amount equal to the Original Issue Price for each outstanding share of Series A Preferred Stock then held by such holder (as adjusted for any stock dividends, combinations, reverse stock splits, stock splits, recapitalizations, reorganizations, reclassifications or other similar event with respect to shares), plus all declared, but un-paid dividends thereon (such Original Issue Price as adjusted (if applicable) and unpaid dividends together, the "Series A Preference Amount"). If upon the occurrence of such an event, the assets and funds legally available for distribution among the holders of the Series A Preferred Stock shall be insufficient to permit the payment to such holders of the full Series A Preference Amount, then the entire assets and funds of the Corporation legally available for distribution shall be distributed ratably among the holders of Series A Preferred Stock in proportion to the full Series A Preference Amount each such holder is otherwise entitled to receive.

(c) After the payment to the holders of Series B Preferred Stock of the full Series B Preference Amount and after the payment to the holders of Series A Preferred Stock of the full Series A Preference Amount as set forth above, any assets remaining in the Corporation shall be distributed among the holders of Preferred Stock and Common Stock pro rata based on the number of shares of Common Stock then held by each holder (assuming conversion of all such series of Preferred Stock into Common Stock).

(d) For purposes of this Article Fourth of this Amended and Restated Certificate of Incorporation, unless otherwise determined by the holders of at least 60% of the then outstanding shares of Series B Preferred Stock, voting together as a single class on an As-If-Converted Basis (as herein defined) (the "Supermajority Holders"), each of the following shall be treated as a Dissolution Event: (1) any liquidation, dissolution or winding up of the Corporation or other distribution of assets of the Corporation among its shareholders for the purpose of winding-up the Corporation's affairs, whether voluntary or involuntary, (2) the closing of the sale, transfer, lease or other disposition of all or

substantially all of the Corporation's assets (including, but not limited to, the licensing of all or substantially all of the intellectual property assets of the Corporation to one or more third parties), (3) the consummation of a merger or consolidation of the Corporation with or into another entity (except a merger or consolidation in which the holders of capital stock of the Corporation immediately prior to such merger or consolidation continue to hold at least 50% of the voting power of the capital stock of the Corporation or the surviving or acquiring entity), or (4) the closing of the transfer (whether by merger, consolidation or otherwise), in one transaction or a series of related transactions, to a person or group of affiliated persons (other than an underwriter of the Corporation's securities), of the Corporation's securities if, after such closing and as a result of such transaction(s), the Corporation's shareholders before such event would own as a result of their ownership of the Corporation's securities before such event fifty percent (50%) or less of the Corporation's voting securities after such event; provided, however, that a transaction shall not constitute a Dissolution Event if its sole purpose is to change the state of the Corporation's incorporation or to create a holding company that will be owned in substantially the same proportions by the persons who held the Corporation's securities immediately prior to such transaction. Notwithstanding the prior sentence, the sale of shares of any class or series of stock of the Corporation to bona fide institutional investors in a financing transaction shall not be deemed a "Dissolution Event." The treatment of any particular transaction or series of related transactions as a Dissolution Event may be waived by the vote or written consent of the Supermajority Holders.

(e) Whenever the distribution provided for in this Section Fourth.B.2(ii) shall be payable in securities or property other than cash, the value of such distribution shall be the Fair Market Value (as defined herein) of such securities or other property. For purposes of this Amended and Restated Certificate of Incorporation, "Fair Market Value" shall mean the fair market value as agreed upon by a majority of the disinterested directors of the Corporation and the Supermajority Holders, and in the event that the Corporation and the Supermajority Holders do not agree upon the fair market value, then the Fair Market Value shall be as determined by an independent third party appraiser without taking into consideration any discount for minority positions.

(iii) Conversion. The holders of the Preferred Stock shall have conversion rights as follows:

(a) *Right to Convert*. Each share of Preferred Stock shall be convertible, in whole or in part, at the option of the holder thereof, at any time after the date of issuance of such share at the office of the Corporation or any transfer agent for such stock, into such number of fully paid and nonassessable shares of Common Stock as is determined by dividing the Original Issue Price applicable to such share of Preferred Stock (plus any declared but unpaid dividends) by the Conversion Price applicable to such share (the conversion rate for a series of Preferred Stock into Common Stock is referred to herein as the "Conversion Rate" for such series), determined as hereinafter provided, in effect on the date the certificate is surrendered for conversion in accordance with paragraph (c) of this Section Fourth.B.2(iii). The initial "Conversion Price" per share of Series A Preferred Stock and Series B Preferred Stock shall be the Original Issue Price applicable to such series of Preferred Stock, so that initially each share of Preferred Stock shall be convertible into one share of Common Stock. Such initial Conversion Rate shall be adjusted as hereinafter provided.

(b) *Automatic Conversion*. Each share of Preferred Stock shall automatically be converted into shares of Common Stock at the then-effective Conversion Rate and such shares may not be reissued by the Corporation as shares of such series upon the earlier of (A) the closing of the sale of the Corporation's Common Stock in a firm commitment, underwritten public offering with a nationally recognized investment bank pursuant to an effective registration statement under the Securities Act of 1933, as amended (the "Securities Act"), other than a registration relating solely to a transaction under Rule 145 under the Securities Act (or any successor thereto), at a public offering price (prior to underwriters' discounts and expenses) equal to or \$0.414 per share (as adjusted for any stock dividends,

combinations, reverse stock splits, stock splits, recapitalizations, reorganizations, reclassifications or other similar event with respect to shares), and in which the aggregate proceeds to the Corporation and/or any selling shareholders (prior to underwriters' discounts and expenses) are at least \$25,000,000 (a "Qualified Public Offering"); or (B) the date specified by the prior written approval of the Supermajority Holders.

(c) *Mechanics of Conversion.*

(I) Before any holder of Preferred Stock shall be entitled to convert any of such shares into shares of Common Stock pursuant to paragraph (a) of this Section Fourth.B.2(iii), such holder shall surrender the certificate or certificates evidencing such shares, duly endorsed (or a reasonably acceptable affidavit and indemnity undertaking in the case of a lost, stolen or destroyed certificate), at the office of the Corporation or of any transfer agent for such stock, and shall give written notice to the Corporation at such office of the number of shares that such holder elects to so convert. The Corporation shall, as soon as practicable thereafter (but in any event within 20 business days thereafter), issue and deliver to such holder of Preferred Stock a certificate or certificates for the number of shares of Common Stock to which such holder shall be entitled as aforesaid and, if applicable, a certificate or certificates representing any such shares of Preferred Stock that are not being so converted (but were otherwise represented by a certificate that included shares that were being so converted). Any conversion shall be deemed to have been made immediately prior to the close of business on the date of surrender of the certificate or certificates for the shares of Preferred Stock to be converted or, if applicable, the date of automatic conversion pursuant to paragraph (b) of this Section Fourth.B.2(iii), and the person or persons entitled to receive the shares of Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or holders of such shares of Common Stock on such date.

(II) In the event of an automatic conversion pursuant to paragraph (b)(A) of this Section Fourth.B.2(iii), the conversion may, at the option of any holder tendering shares of Preferred Stock for conversion, be conditioned upon the closing with the underwriters of the sale of securities pursuant to such offering, in which event the person(s) entitled to receive the Common Stock upon conversion of the Preferred Stock shall not be deemed to have converted such Preferred Stock until immediately prior to the closing of such sale of securities.

(d) *Adjustments to Conversion Rate for Certain Diluting Issues.*

(I) *Special Definitions.* For purposes of this Section Fourth.B.2(iii) (and elsewhere in this Amended and Restated Certificate of Incorporation), the following definitions apply:

(1) "Options" shall mean options, warrants and rights entitling the holders thereof to subscribe for, purchase or otherwise acquire Common Stock, Preferred Stock or Convertible Securities.

(2) "Original Issue Date" shall mean the first date on which a share of Series B Preferred Stock was issued by the Corporation.

(3) "Convertible Securities" shall mean any evidences of indebtedness, shares (other than Common Stock or Preferred Stock) or other securities convertible into or exchangeable for Common Stock.

(4) "Additional Shares of Common Stock" shall mean all shares of Common Stock issued (or, pursuant to subparagraph (d)(III) of this Section Fourth.B.2(iii), deemed to be issued) by the Corporation after the Original Issue Date, other than shares of Common Stock issued or issuable in any of the following transactions ("Exempt Share Issuances"):

(A) upon conversion of shares of Series B Preferred Stock or Series A Preferred Stock;

(B) grants to officers, directors or employees of, or consultants or advisers to, the Corporation pursuant to stock option or stock purchase plans, employment agreements, consulting agreements, warrants or agreements, which grants are on terms from time to time approved by the Corporation's Board of Directors, provided however that all such grants shall not exceed an aggregate of 16,090,323 shares after the Original Issue Date;

(C) to financial institutions or lessors pursuant to commercial credit arrangements, equipment financings, leasing transactions or similar transactions not entered into solely or primarily for capital raising purposes, each of which is approved by the Corporation's Board of Directors, which approval must include approval of a majority of the Investor Directors (as defined below);

(D) in connection with a research, development, distribution or other product or technology-related relationship or transaction, each of which are approved by the Corporation's Board of Directors, which approval must include approval of a majority of the Investor Directors;

(E) upon the exercise of any Options issued and outstanding as of the Original Issue Date;

(F) for which adjustment of the Conversion Rate is made pursuant to paragraph (e) or paragraph (f) of this Section Fourth.B.2(iii); and

(G) pursuant to other issuances specifically approved as Exempt Share Issuances by the Board of Directors, which approval must include approval of a majority of the Investor Directors.

(5) "Person" shall mean any individual, partnership, joint venture, syndicate, sole proprietorship, company or corporation with or without share capital, trust, trustee, executor, administrator, or other legal personal representatives, regulatory body or agency, government or governmental agency, authority or entity howsoever designated or constituted.

(II) [RESERVED.]

(III) *Deemed Issuance of Additional Shares of Common Stock.* Except as otherwise excluded under Section Fourth.B.2(iii)(d)(1)(4), in the event the Corporation at any time or from time to time after the Original Issue Date shall issue any Options or Convertible Securities or shall fix a record date for the determination of holders of any class of securities then entitled to receive any such Options or Convertible Securities, then the maximum number of shares (as set forth in the instrument relating thereto without regard to any provisions contained therein designed to protect against dilution) of Common Stock issuable upon the exercise of such Options or, in the case of Convertible Securities and Options for Convertible Securities, the conversion or exchange of such Convertible Securities, shall be deemed to be Additional Shares of Common Stock issued as of the time of such issue or, in case such a record date shall have been fixed, as of the close of business on such record date, provided that in any such case in which Additional Shares of Common Stock are deemed to be issued:

(1) no further adjustments in the Conversion Rate shall be made upon the subsequent issue of such Convertible Securities where an adjustment to the Conversion Rate had

been made on the record date, or shares of Common Stock upon the exercise of such Options or conversion or exchange of such Convertible Securities, in each case where an adjustment to the Conversion Rate had been made on the record date or issue date;

(2) if such Options or Convertible Securities by their terms provide, with the passage of time or otherwise, for any increase or decrease in the consideration payable to the Corporation, or decrease or increase in the number of shares of Common Stock issuable, upon the exercise, conversion or exchange thereof, the Conversion Rate computed upon the original issue thereof (or upon the occurrence of a record date with respect thereto), and any subsequent adjustments based thereon, shall, upon any such increase or decrease becoming effective, be recomputed to reflect such increase or decrease insofar as it affects such Options or the rights of conversion or exchange under such Convertible Securities (provided, however, that no such adjustment of the Conversion Rate shall affect Common Stock previously issued upon conversion of the Preferred Stock);

(3) upon the expiration of any such Options or any rights of conversion or exchange under such Convertible Securities which shall not have been exercised, the Conversion Rate computed upon the original issuance thereof (or upon the occurrence of a record date with respect thereto), and any subsequent adjustments based thereon, shall, upon such expiration, be recomputed as if:

(A) in the case of Options or Convertible Securities for Common Stock, the only Additional Shares of Common Stock issued were the shares of Common Stock, if any, actually issued upon the exercise of such Options or the conversion or exchange of such Convertible Securities and the consideration received therefor was the consideration actually received by the Corporation for the issue of all such Options, whether or not exercised, plus the consideration actually received by the Corporation upon such exercise or for the issue of all such Convertible Securities which were actually converted or exchanged, plus the additional consideration, if any, actually received by the Corporation upon such conversion or exchange, and

(B) in the case of Options for Convertible Securities, only the Convertible Securities, if any, actually issued upon the exercise thereof were issued at the time of issue of such Options, and the consideration received by the Corporation for the Additional Shares of Common Stock deemed to have been then issued was the consideration actually received by the Corporation for the issue of all such Options, whether or not exercised, plus the consideration deemed to have been received by the Corporation (determined pursuant to subparagraph (d)(V) of this Section Fourth.B.2(iii)) upon the issue of the Convertible Securities with respect to which such Options were actually exercised;

(4) no readjustment pursuant to clause (2) or (3) above shall have the effect of increasing the Conversion Rate to an amount which exceeds the lower of (a) the Conversion Rate on the original adjustment date, or (b) the Conversion Rate that resulted from any issuance of Additional Shares of Common Stock, other than those Additional Shares of Common Stock causing such readjustment, between the original adjustment date and such readjustment date;

(5) in the case of any Options which expire by their terms not more than 30 days after the date of issue thereof, no adjustment of the Conversion Rate shall be made until the expiration or exercise of all such Options, whereupon such adjustment shall be made in the same manner provided in clause (3) above; and

(6) in the event that any adjustment described in this subparagraph (d)(III) is made, with respect to any Additional Shares of Common Stock that were

originally issued (or deemed issued) for a consideration per share equal to or in excess of the Original Issue Price (as adjusted for any stock dividends, combinations, reverse stock splits, stock splits, recapitalizations, reorganizations, reclassifications or other similar event with respect to shares) that, had such adjustment been made prior to such original issue date (or deemed original issue date) would have caused such Additional Shares of Common Stock to be issued for a consideration per share less than the Original Issue Price (as adjusted for any stock dividends, combinations, reverse stock splits, stock splits, recapitalizations, reorganizations, reclassifications or other similar event with respect to shares) then in effect, then such Additional Shares of Common Stock shall be deemed to have been issued as of the date of any such adjustment.

(IV) *Adjustment of Conversion Rate Upon Issuance of Additional Shares of Common Stock.* In the event the Corporation, at any time after the Original Issue Date, shall issue Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be issued pursuant to subparagraph (d)(III) of this Section Fourth.B.2(iii)) without consideration or for a consideration per share less than the Conversion Price for the applicable series of Preferred Stock in effect immediately prior to such issue, then and in such event, the Conversion Price for such series shall be automatically adjusted, concurrently with such issue, in accordance with the following formula; provided, however, that the Conversion Price for Series A Preferred Stock shall not be adjusted pursuant to this subparagraph (d)(IV) of this Section Fourth.B.2(iii) unless and until such Additional Shares of Common Stock are issued without consideration or for a consideration per share less than \$0.138 per share (as adjusted for stock splits, stock dividends, reclassification and the like):

$$CP_2 = CP_1 * ((A + B) / (A + C))$$

For purposes of the foregoing formula, the following definitions shall apply:

(1) "CP₂" shall mean the applicable Conversion Price for Preferred Stock in effect immediately after such issue of Additional Shares of Common Stock;

(2) "CP₁" shall mean the applicable Conversion Price for Preferred Stock in effect immediately prior to such issue of Additional Shares of Common Stock;

(3) "A" shall mean the fully-diluted number of shares of Common Stock outstanding immediately prior to such issue of Additional Shares of Common Stock;

(4) "B" shall mean the number of shares of Common Stock that would have been issued if such Additional Shares of Common Stock had been issued a price per share equal to CP₁ (determined by dividing the aggregate consideration received by the Corporation in respect of such issue by CP₁); and

(5) "C" shall mean the number of such Additional Shares of Common Stock actually issued in such transaction.

(V) *Determination of Consideration.* For purposes of paragraph (d) of this Section Fourth.B.2(iii), the consideration received by the Corporation for the issue of any Additional Shares of Common Stock shall be computed as follows:

(1) *Cash and Property.* Such consideration shall:

(A) insofar as it consists of cash, be computed at the aggregate amount of cash received by the Corporation excluding amounts paid or payable for accrued interest or accrued dividends;

(B) insofar as it consists of property other than cash, be computed at the Fair Market Value thereof at the time of such issue; and

(C) in the event Additional Shares of Common Stock are issued together with other shares or securities or other assets of the Corporation for consideration which covers both, be the proportion of such consideration so received, computed as provided in clauses (A) and (B) above.

(2) *Options and Convertible Securities.* The consideration per share received by the Corporation for Additional Shares of Common Stock deemed to have been issued pursuant to subparagraph (d)(III) of this Section Fourth.B.2(iii), relating to Options and Convertible Securities shall be determined by dividing:

(A) the total amount, if any, received or receivable by the Corporation as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein designed to protect against dilution) payable to the Corporation upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities by

(B) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein designed to protect against dilution) issuable upon the exercise of such Options or conversion or exchange of such Convertible Securities.

(e) *Adjustments to Conversion Rates for Stock Dividends and for Combinations or Subdivisions of Common Stock.* In the event that the Corporation at any time or from time to time after the Original Issue Date shall declare or pay, without consideration, any dividend on the Common Stock payable in shares of Common Stock or in any right to acquire shares of Common Stock for no consideration, or shall effect a subdivision of the outstanding shares of Common Stock into a greater number of shares of Common Stock (by stock split, reclassification or otherwise than by payment of a dividend in shares of Common Stock or in any right to acquire shares of Common Stock), or in the event the outstanding shares of Common Stock shall be combined or consolidated, by reclassification or otherwise, into a lesser number of shares of Common Stock, then the Conversion Rate in effect immediately prior to such event shall, concurrently with the effectiveness of such event, be proportionately decreased or increased, as appropriate. In the event that the Corporation shall declare or pay, without consideration, any dividend on the Common Stock payable in any right to acquire shares of Common Stock for no consideration, then the Corporation shall be deemed to have made a dividend payable in shares of Common Stock in an amount equal to the maximum number of shares issuable upon exercise of such rights to acquire Common Stock.

(f) *Adjustments for Reclassification and Reorganization.* If the Common Stock issuable upon conversion of the Preferred Stock shall be changed into the same or a different number of shares of any other class or classes of stock, whether by capital reorganization, reclassification or otherwise (other than a subdivision or combination of shares provided for in paragraph (e) of this Section Fourth.B.2(iii) above or a merger or other reorganization referred to in paragraph (d) of Section

Fourth.B.2(iii)), the Conversion Rate then in effect shall, concurrently with the effectiveness of such reorganization or reclassification, be proportionately adjusted so that the Preferred Stock shall thereafter be convertible into, in lieu of the number of shares of Common Stock which the holders would otherwise have been entitled to receive, a number of shares of such other class or classes of stock equivalent to the number of shares of Common Stock that would have been received by the holders upon conversion of the Preferred Stock immediately before that change.

(g) *No Impairment.* The Corporation will not, by amendment of this Amended and Restated Certificate of Incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance of performance of any of the terms to be observed or performed hereunder by the Corporation, but will at all times in good faith assist in the carrying out of all the provisions of this Section Fourth.B.2(iii) and in the taking of all such action as may be necessary or appropriate in order to protect the Conversion Rate against impairment.

(h) *Certificates as to Adjustments.* Upon the occurrence of each adjustment or readjustment of the Conversion Rate pursuant to this Section Fourth.B.2(iii), the Corporation at its expense shall promptly compute such adjustment or readjustment in accordance with the terms hereof and prepare and furnish to each holder of Preferred Stock a certificate executed by the Corporation's President or Chief Executive Officer setting forth such adjustment or readjustment and showing in detail the facts upon which such adjustment or readjustment is based. The Corporation shall, upon the written request at any time of any such holder, furnish or cause to be furnished to such holder a like certificate setting forth (i) such adjustments and readjustments, (ii) the Conversion Rate at the time in effect, and (iii) the number of shares of Common Stock and the amount, if any, of other property which at the time would be received upon the conversion of the Preferred Stock.

(i) *Notices of Record Date.* In the event that the Corporation shall propose at any time prior to the conversion of all outstanding shares of the Preferred Stock: (I) to declare any dividend or distribution upon its Common Stock, whether in cash, property, stock or other securities, whether or not a regular cash dividend and whether or not out of earnings or earned surplus; (II) to offer for subscription pro rata to the holders of any class or series of its stock any additional shares of stock of any class or series or other rights; (III) to effect any reclassification or recapitalization of its Common Stock outstanding involving a change in the Common Stock; or (IV) to merge or consolidate with or into any other corporation, or sell, lease or convey all or substantially all of its assets, or to liquidate, dissolve or wind-up; then, in connection with each such event, the Corporation shall send to the holders of Preferred Stock:

(1) at least twenty (20) days' prior written notice of the date on which a record shall be taken for such dividend, distribution or subscription rights (and specifying the date on which the holders of Common Stock shall be entitled thereto) or for determining rights to vote, if any, in respect of the matters referred to in clauses (I) and (II) above; and

(2) in the case of the matters referred to in clauses (III) and (IV) above, at least twenty (20) days' prior written notice of the date when the same shall take place (and specifying the date on which the holders of Common Stock shall be entitled to exchange their Common Stock for securities or other property deliverable upon the occurrence of such event).

(j) *Issue Taxes.* The Corporation shall pay any and all issue and other taxes that may be payable in respect of any issue or delivery of shares of Common Stock on conversion of Preferred Stock pursuant hereto; provided, however, that the Corporation shall not be obligated to pay any transfer taxes resulting from any transfer requested by any holder in connection with any such conversion.

(k) *Reservation of Stock Issuable Upon Conversion.* The Corporation 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; and 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 Corporation 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, including, without limitation, engaging in best efforts to obtain the requisite shareholder approval of any necessary amendment to this Amended and Restated Certificate of Incorporation.

(l) *Fractional Shares.* No fractional share shall be issued upon the conversion of any share or shares 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 a fraction of a share of Common Stock, the Corporation shall, in lieu of issuing any fractional share, pay the holder otherwise entitled to such fraction a sum in cash equal to the Fair Market Value of such fraction on the date of conversion.

(m) *Notices.* Any notice required by the provisions of this Section Fourth.B.2(iii) to be given to the holders of shares of Preferred Stock, unless waived by the holder, shall be deemed given if deposited in the United States mail, postage prepaid, or if sent by facsimile or delivered personally by hand or nationally recognized courier and addressed to each holder of record at such holder's address or facsimile number appearing in the records of the Corporation.

(iv) **Voting Rights and Powers.**

(a) *Preferred Stock.*

(I) *Special Definition:* For purposes of this Amended and Restated Certificate of Incorporation, the following definition applies:

(1) "As-If-Converted Basis" shall mean at any time that all shares of any class in the share capital of the Corporation issued and outstanding at that time which are convertible into Common Stock will be deemed to have been fully converted, in accordance with the rights, privileges, restrictions and conditions attached thereto, into shares of Common Stock and that all shares of Common Stock issuable pursuant to such convertible shares will be deemed to have been issued and to form part of the holdings of the Person(s) entitled to receive such shares of Common Stock.

(II) *Voting of Preferred Stock:* At any meeting of the shareholders of the Corporation, the shares of the Preferred Stock shall be entitled to the number of votes for each such share held that would equal the number of shares of Common Stock issuable upon conversion of such shares on the record date for the meeting. The shares of the Preferred Stock (on an As-If-Converted Basis), together with the Common Stock, shall vote together as a single class of stock, except where voting separately by class or series is required by the DGCL. Notwithstanding anything contained in this Amended and Restated Certificate of Incorporation to the contrary, (a) the written consent of the Supermajority Holders shall be required to alter or change the preferences, rights, privileges or powers of, or the restrictions provided herein for the benefit of, the Series B Preferred Stock in a manner different from that of the other series of Preferred Stock; and (b) the written consent of the holders of a majority of the then outstanding shares of Series A Preferred Stock, voting together as a single class on an As-If-

Converted Basis, shall be required to alter or change the preferences, rights, privileges or powers of, or the restrictions provided herein for the benefit of, the Series A Preferred Stock in a manner different from that of the other series of Preferred Stock.

(III) *Board of Directors.* For so long as any shares of Preferred Stock remain outstanding, the holders of Series B Preferred Stock (on an As-If Converted Basis) shall be entitled to elect two directors (and to fill any vacancies with respect thereto) (each, a "Series B Director") and the holders of Series A Preferred Stock shall be entitled to elect two directors (and to fill any vacancy with respect thereto) (each, a the "Series A Director", and together with the Series B Directors, the "Investor Directors"). The number of authorized members on the Board of Directors shall be set by the Board of Directors, which approval must include a majority of the Investor Directors.

(b) *Supermajority Approval Required.* So long as at least 20% of the number of shares of Preferred Stock originally issued by the Corporation remain outstanding, the Corporation shall not take any of the following actions without the prior written approval of the Supermajority Holders:

(i) authorize any action or take or institute proceedings in furtherance of the liquidation, dissolution or winding-up of the Corporation, whether voluntary or involuntary, or other distribution of assets of the Corporation among its shareholders for the purpose of winding-up its affairs;

(ii) authorize any action or take or institute proceedings in furtherance of any Dissolution Event, including any amalgamation, merger, plan of arrangement or consolidation with any other entity and the acquisition by the Corporation or any subsidiary of any securities, or substantially all of the assets, of any entity;

(iii) approve any change in the rights or preferences of the any class of shares of the Corporation's stock; increase or decrease the total number of authorized shares of Preferred Stock, Common Stock or any other shares of the Corporation's stock; or otherwise amend, alter or repeal any provision of this Amended and Restated Certificate of Incorporation or the by-laws of the Corporation;

(iv) declare, pay or set aside any dividends, or otherwise effect any distributions, on Common Stock, other than stock dividends payable solely in Common Stock;

(v) adopt any stock option or stock purchase plan arrangement, or amend any existing stock option plan or stock purchase plan or arrangement to increase the number of Options or other securities available for issuance thereunder;

(vi) redeem or acquire any securities of the Corporation other than (x) pursuant to Section B.2(ii) of this Article Fourth or (y) the repurchase of shares of Common Stock owned by an employee, advisor, officer, director, consultant or service provider at cost;

(vii) authorize or issue, or obligate itself to authorize or issue, any other equity security having any preference or priority over, or ranking senior to or on parity with, the Series B Preferred Stock;

(viii) create or authorize the creation of any debt security (or related debt securities) in an amount exceeding \$250,000, other than equipment leases or commercial debt lines or credit facilities approved by the Board of Directors (including at least two of the Investor Directors);

(ix) sell, transfer, license, pledge or encumber technology or intellectual property of the Corporation, other than licenses granted in the ordinary course of business approved by the Board of Directors (including at least two of the Investor Directors); or

(x) engage in any recapitalization or reorganization of the Corporation or otherwise reclassify any shares of Common Stock, Preferred Stock or any other securities of the Corporation, or engage in any financing requiring the granting of security over any of the material assets of the Corporation (including its intellectual property).

(v) **Special Mandatory Conversion.**

(a) If an Investor (as defined in the Securities Purchase Agreement) (together with its affiliates) fails to purchase the full number of Series B-2 Shares allocated to such Investor under the Securities Purchase Agreement at the Second Closing (as the terms "Series B-2 Shares" and "Second Closing" are defined in the Securities Purchase Agreement) pursuant to the terms and conditions of the Purchase Agreement, then each share of Series A Preferred Stock and Series B Preferred Stock held by such Investor shall automatically and without further action on the part of such Investor be converted, effective upon and subject to consummation of such Second Closing, into fully-paid, non-assessable shares of Common Stock, at the applicable Conversion Rate for such series of Preferred Stock in effect immediately prior to such Second Closing. The conversion event referred to in this Section is referred to herein as a "Special Mandatory Conversion."

(b) Notwithstanding anything to the contrary contained herein, on the date of a Special Mandatory Conversion, the shares of Preferred Stock subject to such Special Mandatory Conversion 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 Corporation or its transfer agent, provided, however, that the Corporation shall not be obligated to issue certificates evidencing the shares of Common Stock issuable upon such Special Mandatory Conversion unless either the certificates evidencing such shares of Preferred Stock are delivered to the Corporation or its transfer agent as provided above, or the holder notifies the Corporation that such certificates have been lost, stolen or destroyed and executes an agreement satisfactory to the Corporation to indemnify the Corporation from any loss incurred by it in connection with such certificates. On the date of the occurrence of a Special Mandatory Conversion, each holder of record of shares of Preferred Stock subject to such Special Mandatory Conversion shall be deemed to be the holder of record of the Common Stock issuable upon such conversion, notwithstanding that the certificates representing such shares of Preferred Stock shall not have been surrendered at the office of the Corporation, that notice from the Corporation shall not have been received by any holder of record of shares of Preferred Stock or that the certificates evidencing such shares of Common Stock shall not then be actually delivered to such holder.

C. **Terms of Common Stock.** The voting powers and relative, participating, optional and other special rights of the Common Stock, and the qualifications, limitations and restrictions thereof, are as follows:

1. **Voting Rights and Powers.** Except as provided in the DGCL, the holders of shares of the Common Stock shall be entitled to one vote per each share of Common Stock and shall vote together as a single class (with the holders of Preferred Stock entitled to vote together with the holders of the shares of Common Stock) on all matters as to which such holders are entitled to vote.

2. **Preemptive Rights.** The holders of Common Stock shall have no preemptive rights.

FIFTH. All corporate powers of the Corporation shall be exercised by or under the direction of the Board of Directors except as otherwise provided herein or by applicable law. In furtherance and not in limitation of the powers conferred by law, the Board of Directors is expressly authorized:

(i) to adopt, amend or repeal by-laws of the Corporation, subject to the right of the shareholders of the Corporation entitled to vote with respect thereto to adopt by-laws and to amend or repeal by-laws made by the Board of Directors; and

(ii) from time to time to determine whether and to what extent, at what time and place, and under what conditions and regulations the accounts and books of the Corporation, or any of them, shall be open to the inspection of any shareholder; and no shareholder shall have any right to inspect any account or book or document of the Corporation except as provided by applicable law or the by-laws of the Corporation, as authorized by resolution of the shareholders or Board of Directors of the Corporation or as set forth in any agreement among the Corporation and any of its shareholders.

SIXTH. No present or former director or officer of the Corporation or any person acting at the direction of the Board of Directors shall be personally liable to the Corporation or its shareholders for monetary damages for breach of fiduciary duty as a director or officer; provided, however, that this Article shall not be deemed to eliminate or limit a director's or officer's liability to the extent provided by applicable law (i) for any breach of the director's or officer's duty of loyalty to the Corporation or its shareholders; (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of the law; (iii) under Section 174 of Title 8 of the DGCL; or (iv) for any transaction from which the director or officer derived an improper personal benefit. If the DGCL is amended after adoption by the Corporation of this Article to authorize corporate action further eliminating or limiting the personal liability of directors or officers, then the liability of a director or officer of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL, as so amended. Neither the amendment nor the repeal of this Article, nor the adoption of any provision in this Amended and Restated Certificate of Incorporation inconsistent with this Article, shall eliminate or reduce the effect of this Article in respect of any matter occurring, or any cause of action, suit or claim that, but for this Article, would accrue or arise prior to such amendment or repeal of this Article or prior to the adoption of an inconsistent provision.

SEVENTH.

A. Every person who was or is a party or is threatened to be made a party to or is involved in any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that such person or a person of whom such person is a legal representative is or was a director or officer of the Corporation or is or was serving at the request of the Corporation or for its benefit as a director, officer, employee or agent of any other corporation, or as the representative of the Corporation in a partnership, joint venture, trust or other entity, shall be indemnified and held harmless by the Corporation to the fullest extent legally permissible under the DGCL, as amended from time to time, against all expenses, liabilities and losses (including attorneys' fees, judgments, fines and amounts paid or to be paid in settlement) reasonably paid or incurred by such person in connection therewith. Such right of indemnification shall be a contract right that may be enforced in any manner desired by such person. Such right of indemnification shall include the right to be paid by the Corporation the expenses incurred in defending any such action, suit or proceeding in advance of its final disposition upon receipt of an undertaking by or on behalf of such person to repay such amount if ultimately it should be determined that such person is not entitled to be indemnified by the Corporation under the DGCL. Such right of indemnification shall not be exclusive of any other right which such directors, officers or representatives may have or hereafter acquire and, without limiting the generality of such statement, they shall be entitled to their respective rights of indemnification under any by-law,

agreement, vote of shareholders, provision of law or otherwise, as well as their rights under this Article Seventh.

B. The Board of Directors may adopt by-laws from time to time with respect to indemnification to provide at all times the fullest indemnification permitted by the DGCL, as amended from time to time, and may cause the Corporation to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the Corporation, or is or was serving at the request of the Corporation or for its benefit as a director, officer, employee or agent of any other corporation, or as the representative of the Corporation in a partnership, joint venture, trust or other entity, against any expense, liability or loss asserted against or incurred by any such person in any such capacity or arising out of any such status, whether or not the Corporation would have the power to indemnify such person against such expense, liability or loss.

EIGHTH. Except as other as otherwise provided in this Amended and Restated Certificate of Incorporation, the Corporation reserves the right to amend, alter, change or repeal any provision contained in this Amended and Restated Certificate of Incorporation in the manner now or hereafter prescribed by statute, and all rights conferred upon shareholders, directors and officers herein are granted subject to this reservation.

NINTH. The number of years the corporation is to continue is perpetual.

TENTH. The number of directors to constitute the Board of Directors as of the date of this Amended and Restated Certificate of Incorporation shall be seven. The number of directors thereafter shall be as set forth in the by-laws of the Corporation.

ELEVENTH. Elections of directors need not be by written ballot unless the by-laws of the Corporation shall so provide.

TWELFTH. Whenever a compromise or arrangement is proposed between the Corporation and its creditors or any class of them, and/or between the Corporation and its shareholders or any class of them, any court of equitable jurisdiction within the State of Delaware may, on the application in a summary way of the Corporation or of any creditor or shareholder thereof or on the application of any receiver or receivers appointed for this Corporation under the provisions of Section 291 of Title 8 of the Delaware Code or on the application of trustees in dissolution or of any receiver or receivers appointed for this Corporation under the provisions of Section 279 of Title 8 of the Delaware Code, order a meeting of the creditors or class of creditors, and/or of the shareholders or class of shareholders of the Corporation, as the case may be, to be summoned in such manner as the said court directs. If a majority in number representing three-fourths in value of the creditors or class of creditors, and/or of the shareholders or class of shareholders of the Corporation, as the case may be, agree to any compromise or arrangement and to any reorganization of the Corporation as a consequence of such compromise or arrangement, the said compromise or arrangement and the said reorganization shall, if sanctioned by the court to which the said application has been made, be binding on all the creditors or class of creditors, and/or on all the shareholders or class of shareholders, of this Corporation, as the case may be, and also on the Corporation.

THIRTEENTH. Pursuant to Section 122(17) of the DGCL, but except as otherwise set forth in this Article Thirteenth, the Corporation hereby renounces any interest or expectancy of the Corporation or any subsidiary of the Corporation in, or in being offered an opportunity to participate in, any and all business opportunities that are presented to the Investors or their affiliates. As used in this Article Thirteenth, the term "Investor Party" shall include each such Investor and any representative or affiliate of such Investor, including a representative or affiliate serving on the Board of Directors, but shall not include any Investor

who (or whose representative or affiliate) is otherwise employed by the Corporation. If any such Investor Party acquires knowledge of a potential transaction or matter (other than in connection with service on the Board of Directors) that may be an investment or business opportunity or prospective economic or competitive advantage in which the Corporation could have an interest or expectancy (a "Corporate Opportunity") or otherwise is then exploiting any Corporate Opportunity, the Corporation shall have no interest in, and no expectation that, such Corporate Opportunity be offered to it, any such interest or expectation being hereby renounced so that the Investor Parties (a) shall have (i) no duty to communicate or present such Corporate Opportunity to the Corporation and (ii) the right to hold any such Corporate Opportunity for the Investor's own account and benefit or to recommend, assign or otherwise transfer such Corporate Opportunity to any individual or entity other than the Corporation, and (b) to the fullest extent permitted by law cannot be, and shall not be, liable to the Corporation or its shareholders for breach of any fiduciary duty as a shareholder or director of the Corporation by reason of the fact that an Investor pursues or acquires such Corporate Opportunity or recommends, assigns or otherwise transfers such Corporate Opportunity to an individual or entity other than the Corporation; provided, however, that each director of the Corporation shall act in good faith and provided further, that nothing in this Article shall change a director's duties or obligations with respect to proprietary or confidential information of the Corporation or prohibit the Corporation from pursuing any Corporate Opportunity. In addition, a Corporate Opportunity shall belong to the Corporation if such Corporate Opportunity is offered to an individual directly in connection with such individual's service as a director of the Corporation.

Signed this 30th day of December 2009.

By: P. B. Blackwell
Name: Price B. Blackwell, III
Title: President and CEO