

RESEARCH FRONTIERS INC
 Form 424B5
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 Registration Statement No. 333-179099

The information in this preliminary prospectus supplement is not complete and may be changed. A registration statement related to these securities has been declared effective by the Securities and Exchange Commission. This preliminary prospectus supplement and the accompanying prospectus are not an offer to sell these securities and are not the solicitation of an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

Subject to completion, dated August 27, 2012

Prospectus Supplement
 (To Prospectus Dated February 14, 2012)

Shares of Common Stock
Warrants to Purchase Common Stock at \$ _____ per Share

We are offering _____ shares of our common stock, par value \$0.0001 per share, together with warrants to purchase _____ shares of common stock in this offering. This prospectus supplement also covers the shares of common stock issuable from time to time upon the exercise of these warrants. Each share of common stock sold in this offering will be sold with a warrant to purchase 0.20 of a share of common stock at an exercise price of \$ _____ per share (150% of the aggregate offering price of a share and corresponding warrant). Each share and corresponding warrant will be sold at an aggregate public offering price of \$ _____.

Our common stock is listed on the NASDAQ Capital Market under the symbol REFR. We do not intend to list the warrants to be sold in this offering on any securities exchange. On August 24, 2012, the last reported sale price of our common stock on the NASDAQ Capital Market was \$2.92 per share.

Our principal executive office is located at 240 Crossways Park Drive, Woodbury, New York 11797. Our telephone number is (516) 364-1902. We do not intend for information contained on our web site to be part of this prospectus supplement.

Investing in our common stock involves a high degree of risk. See Risk Factors beginning on page S-2 of this prospectus supplement.

	Per Share and Corresponding Warrant(1)	Total
Public offering price	\$ _____	\$ _____
Underwriting discount	\$ _____	\$ _____
Proceeds, before expenses, to us	\$ _____	\$ _____

In addition to the underwriting discount, we have agreed to pay up to \$25,000 of the fees and expenses of the underwriter in connection with this offering. See Underwriting beginning on page S-9 of this prospectus supplement.

(1) Each share will be sold with one-fifth of a warrant expiring five years after the closing of this offering to purchase common stock at an exercise price of \$ _____ per share.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The underwriter expects to deliver the shares of common stock and warrants to the purchasers on or about _____, 2012.

Sole Book-Running Manager

Craig-Hallum Capital Group

The date of this prospectus supplement is _____, 2012

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You should rely only on the information contained in or incorporated by reference in this prospectus supplement and the accompanying prospectus. We have not authorized anyone to provide you with different information. We are not making an offer of these securities in any state where the offer is not permitted. You should not assume that the information contained in or incorporated by reference in this prospectus supplement or the accompanying prospectus is accurate as of any date other than the date of such document.

About this Prospectus Supplement

This prospectus supplement and the accompanying base prospectus dated February 14, 2012 are part of a shelf registration statement that we have filed with the Securities and Exchange Commission, or SEC, and was declared effective by the SEC. Each time we sell securities under the accompanying base prospectus we will provide a prospectus supplement that will contain specific information about the terms of that offering, including the price, the amount of common stock being offered and the plan of distribution. This prospectus supplement describes the specific details regarding this offering, including the price, the amount and type of securities being offered, the risks of investing in our securities and the underwriting of this offering. The accompanying base prospectus provides general information about us, some of which, such as the section entitled Plan of Distribution, may not apply to this offering.

If information in this prospectus supplement is inconsistent with the accompanying base prospectus or the information incorporated by reference, you should rely on this prospectus supplement. You should read both this prospectus supplement and the accompanying base prospectus together with the additional information about Research Frontiers Incorporated that is incorporated by reference in this prospectus supplement and the accompanying base prospectus.

The following trademarks are property of Research Frontiers: SPD-Smart , SPD-SmartGlass , VaryFast , SPD-CleanTech , SPD Clean Technology , SmartGlass , The View of the Future - Everywhere you Look , Powered by SPD , Powered by SPD-CleanTech , Powered by SPD Clean Technology , SG Enabled , SPD Green and Clean , SPD On-Board , Speed Matters , and Visit SmartGlass.com - to change your view of the world . Other trademarks appearing in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein are property of their respective owners.

Risk Factors

In addition to the other information in this prospectus, you should carefully consider the following factors in evaluating us and our business before purchasing the securities offered hereby. This prospectus supplement, the accompanying prospectus and the information incorporated by reference in this prospectus supplement and the accompanying prospectus contains, in addition to historical information, forward-looking statements that involve risks and uncertainties, some of which are beyond our control. Should one or more of these risks and uncertainties materialize or should underlying assumptions prove incorrect, our actual results could differ materially. Factors that could cause or contribute to such differences include, but are not limited to, those discussed below, as well as those discussed elsewhere in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference in this prospectus supplement and the accompanying prospectus.

There are risks associated with investing in companies such as ours who are engaged in research and development. Because of these risks, you should only invest if you are able to bear the risk of losing your entire investment. Before investing, in addition to risks which could apply to any issuer or offering, you should also consider the business we are in and the following:

Source and Need for Capital.

As of June 30, 2012, we had approximately \$1.8 million in cash and cash equivalents. As we take steps in the commercialization and marketing of our technology, or respond to potential opportunities and/or adverse events, our working capital needs may change. We anticipate that if our cash and cash equivalents are insufficient to satisfy our liquidity requirements, we will require additional funding to sustain our ongoing operations and to continue our SPD technology research and development activities.

We have funded most of our activities through sales of our common stock to investors, and upon the exercise of options and warrants. Eventual success of the Company and generation of positive cash flow will be dependent upon the extent of commercialization of products using the Company's technology by the Company's licensees and payments of continuing royalties on account thereof. We can give no assurances that we will generate sufficient revenues in the future (through sales of our common stock, exercise of options and warrants, royalty fees, or otherwise) to satisfy our liquidity requirements or sustain future operations, or that additional funding, if required, will be available when needed or, if available, on favorable terms.

History of Operating Losses.

We have experienced net losses from operations, and we may continue to incur net losses from operations in the future. We have incurred substantial costs and expenses in researching and developing our SPD technology. As of June 30, 2012, we had an accumulative deficit of \$86,001,157. Our net loss was \$4,134,068 in 2011, \$3,874,865 in 2010 and \$4,002,761 in 2009 and \$1,592,871 for the six months ended June 30, 2012 (which includes non-cash accounting charges in 2011, 2010 and 2009 of \$702,837, \$772,604 and \$445,913, respectively, and in the six months ended June 30, 2012 of \$507,000).

We have never declared a cash dividend and do not intend to declare a cash dividend in the foreseeable future.

We have never declared or paid cash dividends on our common stock. Payment of dividends on our common stock is within the discretion of our Board of Directors and will depend upon our future earnings, capital requirements, financial condition and other relevant factors. We do not anticipate declaring or paying any cash dividends on our common stock in the foreseeable future.

We do not directly manufacture or market products using SPD technology and depend upon activities by our licensees and their customers.

We depend upon the activities of our licensees in order to be profitable. We do not directly manufacture or market products using SPD technology. Although a variety of products have been sold by our licensees, and because it is up to our licensees to decide when and if they will introduce products using SPD technology, we cannot predict when and if our licensees will generate substantial sales of such products. Our SPD technology is currently licensed to 39 companies. Other companies are also evaluating SPD technology for use in various products. In the past, some companies have evaluated our technology without proceeding further. While we expect that our licensees would be primarily responsible for manufacturing and marketing SPD-Smart products and components, we are also engaging in market development activities to support our licensees and build the smart glass industry. We cannot control whether or not our licensees will develop SPD products. Some of our licensees appear to be more active than others, some appear to be better capitalized than others, and some licensees appear to be inactive. There is no guarantee when or if our licensees will successfully produce any commercial product using SPD technology in sufficient quantities to make the Company profitable.

SPD-Smart products have only recently been introduced.

Products using SPD technology have only recently begun to be introduced into the marketplace. Developing products using new technologies can be risky because problems, expenses and delays frequently occur, and costs may or may not come down quickly enough for such products using new technologies to rapidly penetrate mass market applications.

SPD-Smart products face intense competition, which could affect our ability to increase our revenues.

The market for SPD-Smart products is intensely competitive and we expect competition to increase in the future. We compete based on the functionality and the quality of our product. Many of our current and potential competitors have significantly greater financial, technical, marketing and other resources than we have. In addition, many of our competitors have well-established relationships with our current and potential customers and have extensive knowledge of our industry. If our competitors develop new technologies or new products, improve the functionality or quality of their current products, or reduce their prices, and if we are unable to respond to such competitive developments quickly either because our research and development efforts do not keep pace with our competitors or because of our lack of financial resources, we may be unable to compete effectively.

Declining production of automobiles, airplanes, boats and real estate could harm our business.

Our licensees' commercialization efforts of SPD-Smart products could be negatively impacted if the global production of automobiles, airplanes, boats and real estate construction declines significantly. If such commercialization is reduced, our revenues, results of operations and financial condition could be negatively impacted.

Single source of SPD film.

Our end-product licensees require a source of SPD film to manufacture finished products. Currently, Hitachi Chemical is the sole source of commercial quantities of SPD-film. There are several other companies that are licensed to manufacture SPD-film, but they have not begun commercial production of this film. Our end-product licensees' ability to sell SPD products could be negatively impacted if there was a prolonged disruption in SPD-film availability. Such a disruption could also negatively impact our revenues, results of operations and financial condition.

We are dependent on key personnel.

Our continued success will depend, to a significant extent, on the services of our directors, executive management team, key personnel and certain key scientists. If one or more of these individuals were to leave the Company, there is no guarantee that we could replace them with qualified individuals in a timely or economically satisfactory manner or at all. The loss or unavailability of any or all of these individuals could harm our ability to execute our business plan, maintain important business relationships and complete certain product development initiatives, which would have a material adverse effect on our business, results of operations and financial conditions.

Dependence on SPD-Smart technology.

Because SPD technology is the only technology we work with, our success depends upon the viability of SPD technology which has yet to be fully proven. We have not fully ascertained the performance and long-term reliability of our technology, and therefore there is no guarantee that our technology will successfully be incorporated into all of the products which we are targeting for use of SPD technology. We expect that different product applications for SPD technology will have different performance and reliability specifications. We expect that our licensees will primarily be responsible for reliability testing, but that we may also continue to do reliability testing so that we can more effectively focus our research and development efforts towards constantly improving the performance characteristics and reliability of products using SPD technology.

Our patents and other protective measures may not adequately protect our proprietary intellectual property, and we may be infringing on the rights of others.

Our intellectual property, particularly our proprietary rights in our SPD technology, is critical to our success. We have received various patents, and filed other patent applications, for various applications and aspects of our SPD technology. In addition, we generally enter into confidentiality and invention agreements with our employees and consultants. Such patents and agreements and various other measures we take to protect our intellectual property from use by others may not be effective for various reasons generally applicable to patents and their granting and enforcement. In addition, the costs associated with enforcing patents, confidentiality and invention agreements or other intellectual property rights may be expensive. Our inability to protect our proprietary intellectual property rights or gain a competitive advantage from such rights could harm our ability to generate revenues and, as a result, our business and operations.

We have broad discretion in the use of the proceeds of this offering.

All of our net proceeds from this offering will be used, as determined by management in its sole discretion, for working capital and other general corporate purposes. Our management will have broad discretion over the use and investment of the net proceeds of this offering and there is no assurance that management's chosen application of proceeds will yield the intended results. You will not have the opportunity, as part of your investment decision, to assess whether our proceeds are being used appropriately. Pending application of our proceeds, they might be placed in investments that do not produce income or that lose value.

Future sales of our securities could cause our stock price to decline.

If we or our stockholders sell substantial amounts of our common stock in the public market, the market price of our common stock could decrease. The perception in the public market that we or our stockholders might sell shares of our common stock could also depress the market price of our common stock. 1,972,452 shares of our common stock that will be owned by Robert L. Saxe, one of our directors, Joseph M. Harary, our President and Chief Executive Officer, and Seth Van Voorhees, our Chief Financial Officer and Vice President of Business Development, immediately after completion of this offering will become eligible for sale in the public markets from time to time, subject to restrictions under the Securities Act of 1933 following the expiration of lock-up agreements entered into for the benefit of the underwriter. These lock-up agreements are subject to certain exceptions, including for non-elected or forced sales of our securities by the stockholder in connection with margin accounts each maintains with broker-dealers. In addition, the underwriter may, in its sole discretion and at any time or from time to time, release all or any portion of the securities subject to the lock-up agreements for sale in the public and private markets prior to the expiration of the lock-up. The market price for shares of our common stock may drop significantly when the restrictions on resale by our existing stockholders lapse or if those restrictions on resale are waived. A decline in the price of shares of our common stock might impede our ability to raise capital through the issuance of additional shares of our common stock or other equity securities.

The low trading volume of our common stock may make it difficult for you to sell your shares at a particular price.

Although our common stock is listed on the NASDAQ Capital Market, our common stock has experienced low trading volume. Reported average daily trading volume in our common stock for 2012 through August 20, 2012, was approximately 21,000 shares. There is no assurance that this offering will increase the volume of trading in our common stock. Limited trading volume subjects our common stock to greater price volatility and may make it difficult for you to sell your shares at a particular price.

Our ability to use net operating loss carryforwards might be limited.

At December 31, 2011, we had a net operating loss carryforward for federal income tax purposes of \$55 million, varying amounts of which will expire in each year from 2012 through 2031. To the extent these net operating loss carryforwards are available, we intend to use them to reduce any corporate income tax liability associated with our operations we might have in the future. Section 382 of the Internal Revenue Code generally imposes an annual limitation on the amount of net operating loss carryforwards that might be used to offset taxable income when a corporation has undergone significant changes in stock ownership. As a result, prior or future changes in ownership could put limitations on the availability of our net operating loss carryforwards. In addition, our ability to utilize the current net operating loss carryforwards might be further limited by the issuance of securities in this offering or future offerings. To the extent our use of our net operating loss carryforwards or tax losses is limited, our income could be subject to corporate income tax earlier than it would if we were able to use net operating loss carryforwards, which could result in lower profits.

Our organizational documents, stockholders' rights plan and Delaware law make a takeover of our company more difficult, which may prevent certain changes in control and limit the market price of our common stock.

Our certificate of incorporation, bylaws, stockholders' rights plan and Section 203 of the Delaware General Corporation Law contain provisions that may have the effect of deterring or delaying attempts by our stockholders to remove or replace management, engage in proxy contests and effect changes in control. These provisions of our certificate of incorporation and bylaws include:

- the authority for our board of directors to issue without stockholder approval up to 100,000,000 shares of common stock, that, if issued, would dilute the ownership of our stockholders;
- the advance notice requirement for director nominations or for proposals that can be acted upon at stockholder meetings;
- a classified board of directors, which may make it more difficult for a person who acquires control of a majority of our outstanding voting stock to replace all or a majority of our directors;
- the ability of our directors to fill any vacancy on our board of directors by the affirmative vote of a majority of the directors then in office under certain circumstances;
- limitations on the ability of our stockholders to act by written consent;
- limitations on who may call a special meeting of stockholders;
- the prohibition on stockholders accumulating their votes for the election of directors;
- the limitation on the removal of any of our directors by either an affirmative vote of the continuing directors (as defined in our certificate of incorporation) other than the subject director or by the affirmative vote of the holders of 80% of our outstanding shares of each class of stock having the power to vote in a director election;
- the requirement of the affirmative vote of the holders of at least 80% of our outstanding shares of each class of stock having the power to vote in a director election in order for stockholders to adopt, amend or repeal any provision of our certificate of incorporation or bylaws, unless the adoption, amendment or repeal is approved by a majority of the continuing directors (as defined in our certificate of incorporation) present at a meeting at which a quorum of the continuing directors are present; and
- the requirement, subject to limited exceptions, of the affirmative vote of the holders of at least 80% of our outstanding shares of each class of stock having the power to vote in a director election in order for us to complete certain business combination transactions with interested stockholders.

We also have adopted a stockholders' rights plan designed to deter stockholders from acquiring shares of stock in excess of 15%. In addition, as a Delaware corporation, we are subject to Delaware law, including Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years following the date that the stockholder became an interested stockholder unless certain specific requirements are met as set forth in Section 203.

These provisions could discourage proxy contests and make it more difficult for you and other stockholders to elect directors, replace incumbent management and take other corporate actions. Some provisions in our certificate of incorporation and bylaws may deter third parties from acquiring us, which may limit the market price of our common stock or prevent us from consummating a proposed transaction that our stockholders find to be in their best interests.

There is currently no established trading market for the warrants and we do not expect that one will develop.

The warrants to be sold in this offering will not be listed on the NASDAQ Capital Market or any other securities exchange and there is currently no established trading market for the warrants. We do not intend to make a market in the warrants and do not expect that one will develop. Therefore, you may have to hold the warrants you purchase in this offering until such time, if any, as you wish to exercise the warrants or we redeem them.

There must be a current prospectus and state registration in order for you to exercise the warrants.

Purchasers of the common stock and warrants in this offering will be able to exercise the warrants only if a current prospectus relating to the common stock underlying the warrants is then in effect and only if such securities are qualified for sale or exempt from qualification under the applicable securities laws of the states in which the various holders of warrants reside. Although we will attempt to maintain the effectiveness of a current prospectus covering the common stock underlying the warrants, there can be no assurance that we will be able to do so. We will be unable to issue common stock to those persons desiring to exercise their warrants if a current prospectus covering the common stock issuable upon the exercise of the warrants is not kept effective or if such shares are neither qualified nor exempt from qualification in the states in which the holders of the warrants reside.

Available Information

Research Frontiers files reports, proxy statements and other information with the SEC. You may read and copy such reports, proxy statements and other information at the public reference room maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549 and you can obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains an internet web site at <http://www.sec.gov> that contains reports, proxy and information statements and other information regarding issuers, such as Research Frontiers, that file electronically with the SEC. Additional information about us can also be found at our web site at <http://www.SmartGlass.com>. The information on, or that may be accessed through, our web site is not incorporated by reference into and should not be considered a part of this prospectus supplement.

The SEC allows us to incorporate by reference the information we file with them, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus, and later information that we file with the SEC will automatically update and supersede this information. We incorporate by reference into this prospectus our:

- annual report on Form 10-K for the fiscal year ended December 31, 2011,
- the portions of the proxy statement dated April 27, 2012 for our annual meeting of stockholders held on June 14, 2012 that have been incorporated by reference into our report on Form 10-K for the fiscal year ended December 31, 2011,
- quarterly reports on Form 10-Q for the fiscal quarters ended March 31, 2012 and June 30, 2012,
- current reports on Form 8-K filed with the SEC on June 18, 2012 and August 2, 2012,
- the description of the capital stock contained in the Research Frontiers registration statements on Form 8-A under the Securities Exchange Act of 1934 dated July 31, 1995 and February 24, 2003.

All filings filed by Research Frontiers with the SEC under Sections 13(a), 13(c), 14, or 15(d) of the Exchange Act subsequent to the initial filing of this prospectus supplement and prior to the termination of the offering or sale of all securities offered under this prospectus supplement shall be deemed to be incorporated by reference into this prospectus supplement (except for information furnished and not filed with the SEC in a Current Report on Form 8-K).

We will provide each person to whom this prospectus supplement is delivered, a copy of any information we have incorporated by reference but have not delivered along with this prospectus supplement. If you would like a copy of any document incorporated herein by reference, other than exhibits unless such exhibits are specifically incorporated by reference in any such document, you can call or write to us at our principal executive offices:

240 Crossways Park Drive, Woodbury, New York 11797-2033, Attention: Corporate Secretary (telephone: (516) 364-1902). We will provide this information without charge to any person, including a beneficial owner, to whom a copy of this prospectus supplement is delivered upon written or oral request.

No dealer, salesperson or other individual has been authorized to give any information or to make any representation not contained in or incorporated by reference in this prospectus or in any supplement to this prospectus. If given or made, you must not rely on such information or representation as having been authorized by Research Frontiers. Neither the delivery of this prospectus nor any sale made hereunder will, under any circumstances, create an implication that there has not been any change in the affairs of Research Frontiers since the date of this prospectus or that the information contained herein is correct or complete as of any time after the date of this prospectus.

The information set forth herein and in all publicly disseminated information about Research Frontiers, includes forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, and is subject to the safe harbor created by that section. Readers are cautioned not to place undue reliance on these forward-looking statements as they speak only as of the date of this prospectus and are not guaranteed.

Use of Proceeds

We currently intend to use the net proceeds from this offering for working capital general corporate purposes, including our internal research and development programs and possible future acquisitions.

We have not determined the amounts we plan to spend on any of the areas listed above or the timing of these expenditures. As a result, our management will have broad discretion to allocate the net proceeds from this offering. Pending application of the net proceeds as described above, we intend to invest the net proceeds of the offering in money market funds and other interest-bearing investments.

Description of Warrants

Each purchaser in this offering will receive a warrant to purchase one share of our common stock for every five shares of common stock purchased in this offering, rounded to the nearest whole share. The warrants will be issued pursuant to warrant agreements executed by us.

Each warrant will entitle the holder to purchase one share of common stock at an exercise price of \$ _____ per share (150% of the aggregate offering price for a share of common stock and corresponding warrant). Holders of the warrants may exercise the warrants at any time from the date of issuance to 4:30 P.M. Woodbury, New York time on the date that is five years after the closing of this offering, after which unexercised warrants will become void.

Holders of the warrants may exercise the warrants by delivering the warrant certificate representing the warrants to be exercised together with specified information, and paying the required amount to the Company in immediately available cash funds. Upon receipt of the required payment and the warrant certificate properly completed and duly executed, we will issue and deliver the number of shares of common stock purchasable upon such exercise. If fewer than all of the warrants represented by the warrant certificate are exercised, then we will issue a new warrant certificate for the remaining amount of warrants.

The Warrants provide that unless a holder waives the provision, the warrant holder may not exercise the warrant to the extent that such exercise will cause the warrant holder to beneficially own more than 4.999% of the common stock of the Company then outstanding. In no event may a warrant holder exercise warrants if such exercise shall cause the warrant holder to own more than 9.999% of the common stock of the Company then outstanding.

The exercise price and the number and type of securities purchasable upon exercise of warrants are subject to adjustment upon certain corporate events, including certain combinations, consolidations, liquidations, mergers, recapitalizations, reclassifications, reorganizations, stock dividends and stock splits, a sale of all or substantially all of our assets and certain other events.

No fractional warrant shares will be issued upon exercise of the warrants. Before exercising their warrants, holders of warrants will not have any of the rights of holders of common stock, including the right to receive dividends, if any, or, payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

Underwriting

The underwriter named below has agreed to buy, subject to the terms of the underwriting agreement, the number of securities listed opposite its name below. The underwriter is committed to purchase and pay for all of the securities if any are purchased. The underwriting agreement also provides that if the underwriter defaults, this offering of our securities may be terminated.

Underwriter	Number of Shares of Common Stock	Number of Shares of Common Stock Underlying Warrants
Craig-Hallum Capital Group		

The underwriter has advised us that it proposes to offer the shares of common stock and corresponding warrants to the public at an aggregate price of \$ per share and corresponding warrant. Each purchaser of a share of common stock will be required to purchase a corresponding warrant to purchase 0.20 of a share of common stock in this offering. The underwriter proposes to offer the securities to be sold in this offering to certain dealers at the same prices less an aggregate concession of not more than \$ for each share and corresponding warrant. After the offering, these figures may be changed by the underwriter.

The table below summarizes the underwriting discounts that we will pay to the underwriter. In addition to the underwriting discount, we have agreed to pay up to \$25,000 of the fees and expenses of the underwriter, which may include the fees and expenses of counsel to the underwriter. The fees and expenses of the underwriter that we have agreed to reimburse are not included in the underwriting discounts set forth in the table below.

The underwriter has not received and will not receive from us any other item of compensation or expense in connection with this offering considered by the Financial Industry Regulatory Authority to be underwriting compensation under its rule of fair price. The underwriting discount and other items of compensation the underwriter will receive were determined through arms length negotiations between us and the underwriter.

	Per Share and Corresponding Warrant	Total
Underwriting discount to be paid to the underwriter by us	\$	\$

We estimate that the total expenses of the offering, excluding underwriting discounts and commissions, will be \$90,000. This includes \$25,000 of fees and expenses of the underwriter. These expenses are payable by us.

We have agreed to indemnify the underwriter against certain liabilities, including civil liabilities under the Securities Act, or to contribute to payments that the underwriter may be required to make in respect of those liabilities.

Robert L. Saxe, one of our directors, Joseph M. Harary, our President and Chief Executive Officer, and Seth Van Voorhees, our Chief Financial Officer and Vice President of Business Development, have agreed not to offer, sell, agree to sell, directly or indirectly, or otherwise dispose of any shares of common stock or any securities convertible into or exchangeable for shares of common stock without the prior written consent of the underwriter for a period of 30 days after the date of this prospectus supplement. These lock-up agreements cover approximately an aggregate of 1,972,452 shares of our common stock and are subject to certain exceptions, including for non-elected or forced sales of our securities by such person in connection with margin accounts each maintains with broker-dealers and for which shares of our common stock serve as collateral with respect to such accounts. Each of Messrs. Saxe, Harary and Van Voorhees has agreed to take all steps reasonably available to prevent any such non-elected or forced sale.

We have agreed to certain restrictions on our ability to sell additional shares of our common stock for a period of 30 days after the date of this prospectus supplement. We have agreed not to offer, sell, agree to sell, directly or indirectly, or otherwise issue or dispose of, any shares of common stock, securities convertible into or exchangeable for shares of common stock, or any related security or instrument, without the prior written consent of the underwriter. The agreement is subject to limited exceptions.

To facilitate the offering, the underwriter may engage in transactions that stabilize, maintain or otherwise affect the price of the common stock during and after the offering. Specifically, the underwriter may over-allot or otherwise create a short position in the common stock for its own account by selling more shares than have been sold to it by us. The underwriter may elect to cover any such short position by purchasing shares of common stock in the open market. In addition, the underwriter may stabilize or maintain the price of the common stock by bidding for or purchasing shares of common stock in the open market and may impose penalty bids. If penalty bids are imposed, selling concessions allowed to broker-dealers participating in the offering are reclaimed if shares of common stock previously distributed in the offering are repurchased, whether in connection with stabilization transactions or otherwise. The effect of these transactions may be to stabilize or maintain the market price of the common stock at a level above that which might otherwise prevail in the open market. The imposition of a penalty bid may also affect the price of the common stock to the extent that it discourages resales of the common stock. The magnitude or effect of any stabilization or other transactions is uncertain. These transactions may be effected on the NASDAQ Stock Market or otherwise and, if commenced, may be discontinued at any time.

In connection with this offering, the underwriter (and selling group members) may also engage in passive market making transactions in the common stock on the NASDAQ Stock Market. Passive market making consists of displaying bids on the NASDAQ Stock Market limited by the prices of independent market makers and effecting purchases limited by those prices in response to order flow. Rule 103 of Regulation M promulgated by the SEC limits the amount of net purchases that each passive market maker may make and the displayed size of each bid. Passive market making may stabilize the market price of the common stock at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

The underwriter may facilitate the marketing of this offering online directly or through one of its affiliates. In those cases, prospective investors may view offering terms and a prospectus online and place orders online or through their financial advisors.

Legal Matters

The legality of the securities offered hereby has been passed upon by the law firm of Duane Morris LLP. As of the August 24, 2012, Victor F. Keen, a Director of the Company and Of Counsel to Duane Morris LLP owns 293,639 shares of the Company's Common Stock directly, 48,160 shares of Common Stock in his IRA, and holds options and warrants to purchase 67,500 shares of the Company's Common Stock. The underwriter has been represented in connection with this offering by Faegre Baker Daniels LLP, Minneapolis, Minnesota.

Experts

The financial statements and schedule of Research Frontiers as of December 31, 2011 and 2010, and for each of the three years in the period ended December 31, 2011, and management's assessment of the effectiveness over internal controls as of December 31, 2011, incorporated by reference into this prospectus supplement have been so incorporated in reliance upon the reports of BDO USA, LLP, an independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in accounting and auditing.

PROSPECTUS

RESEARCH FRONTIERS INCORPORATED

3,000,000 Shares

Common Stock

Research Frontiers Incorporated may from time to time issue up to 3,000,000 shares of common stock, and/or warrants to purchase such common stock. A general description of the known material terms of the securities we are offering is included herein. We will specify in an accompanying prospectus supplement any specific material terms of the securities offered which are unknown as of the date of this prospectus. We may sell these securities to or through underwriters and also to other purchasers or through agents. We will set forth the names of any underwriters or agents in the accompanying prospectus supplement.

Our common stock is listed on the Nasdaq Capital Market under the symbol REFR. The last reported sale price of our common stock on the Nasdaq Capital Market on January 18, 2012 was \$3.73.

Investing in our common stock involves a high degree of risk. See Risk Factors beginning on page 3.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

This prospectus may not be used to consummate a sale of securities unless it is accompanied by a prospectus supplement.

The date of this prospectus is February 14, 2012

SUMMARY

You should read the entire prospectus, including the section entitled Risk Factors, carefully before making an investment decision.

THE COMPANY

Research Frontiers Incorporated (Research Frontiers or the Company) develops and licenses its suspended particle technology for controlling the amount of light passing through a device. Such suspended particle devices are often referred to as SPDs, light valves, or SPD-Smart products.

SPDs use microscopic light-absorbing particles that are either in a liquid suspension or a film. The microscopic particles align when an electrical voltage is applied. This permits light to pass through the device, and allows the amount of light to be controlled. Our offices are located at: 240 Crossways Park Drive, Woodbury, NY 11797 (telephone: 516-364-1902).

RISK FACTORS

In addition to the other information in this prospectus, you should carefully consider the following factors in evaluating us and our business before purchasing the shares of common stock offered hereby. This prospectus contains, in addition to historical information, forward-looking statements that involve risks and uncertainties, some of which are beyond our control. Should one or more of these risks and uncertainties materialize or should underlying assumptions prove incorrect, our actual results could differ materially. Factors that could cause or contribute to such differences include, but are not limited to, those discussed below, as well as those discussed elsewhere in this prospectus, including the documents incorporated by reference.

There are risks associated with investing in companies such as ours who are engaged in research and development. Because of these risks, you should only invest if you are able to bear the risk of losing your entire investment. Before investing, in addition to risks which could apply to any issuer or offering, you should also consider the business we are in and the following:

Source and Need for Capital.

As of September 30, 2011, we had approximately \$4.7 million in cash, cash equivalents and bank certificates of deposits. As we take steps in the commercialization and marketing of our technology, or respond to potential opportunities and/or adverse events, our working capital needs may change. We anticipate that if our cash and cash equivalents are insufficient to satisfy our liquidity requirements, we will require additional funding to sustain our ongoing operations and to continue our SPD technology research and development activities.

We have funded most of our activities through sales of our common stock to investors, and upon the exercise of options and warrants. Eventual success of the Company and generation of positive cash flow will be dependent upon the extent of commercialization of products using the Company's technology by the Company's licensees and payments of continuing royalties on account thereof. We can give no assurances that we will generate sufficient revenues in the future (through sales of our common stock, exercise of options and warrants, royalty fees, or otherwise) to satisfy our liquidity requirements or sustain future operations, or that additional funding, if required, will be available when needed or, if available, on favorable terms.

History of Operating Losses.

We have experienced net losses from operations, and we may continue to incur net losses from operations in the future. We have incurred substantial costs and expenses in researching and developing our SPD technology. As of September 30, 2011, we had a cumulative net loss of \$83,584,461 since our inception. Our net loss was \$3,874,865 in 2010, \$4,002,761 in 2009 and \$2,594,843 in 2008 (which includes non-cash accounting charge in 2010, 2009 and 2008 of \$772,604, \$445,913, and \$126,408, respectively, resulting from the expensing of stock options).

We have never declared a cash dividend and do not intend to declare a cash dividend in the foreseeable future.

We have never declared or paid cash dividends on our common stock. Payment of dividends on our common stock is within the discretion of our Board of Directors and will depend upon our future earnings, capital requirements, financial condition and other relevant factors. We do not anticipate declaring or paying any cash dividends on our common stock in the foreseeable future.

We do not directly manufacture or market products using SPD technology and depend upon activities by our licensees and their customers.

We depend upon the activities of our licensees in order to be profitable. We do not directly manufacture or market products using SPD technology. Although a variety of products have been sold by our licensees, and because it is up to our licensees to decide when and if they will introduce products using SPD technology, we cannot predict when and if our licensees will generate substantial sales of such products. Our SPD technology is currently licensed to 39 companies. Other companies are also evaluating SPD technology for use in various products. In the past, some companies have evaluated our technology without proceeding further. While we expect that our licensees would be primarily responsible for manufacturing and marketing SPD-Smart products and components, we are also engaging in market development activities to support our licensees and build the smart glass industry. We cannot control whether or not our licensees will develop SPD products. Some of our licensees appear to be more active than others, some appear to be better capitalized than others, and some licensees appear to be inactive. There is no guarantee when or if our licensees will successfully produce any commercial product using SPD technology in sufficient quantities to make the Company profitable.

SPD-Smart products have only recently been introduced.

Products using SPD technology have only recently begun to be introduced into the marketplace. Developing products using new technologies can be risky because problems, expenses and delays frequently occur, and costs may or may not come down quickly enough for such products using new technologies to rapidly penetrate mass market applications.

SPD-Smart products face intense competition, which could affect our ability to increase our revenues.

The market for SPD-Smart products is intensely competitive and we expect competition to increase in the future. We compete based on the functionality and the quality of our product. Many of our current and potential competitors have significantly greater financial, technical, marketing and other resources than we have. In addition, many of our competitors have well-established relationships with our current and potential customers and have extensive knowledge of our industry. If our competitors develop new technologies or new products, improve the functionality or quality of their current products, or reduce their prices, and if we are unable to respond to such competitive developments quickly either because our research and development efforts do not keep pace with our competitors or because of our lack of financial resources, we may be unable to compete effectively.

Declining production of automobiles, airplanes, boats and real estate could harm our business.

Our licensees' commercialization efforts of SPD-Smart products could be negatively impacted if the global production of automobiles, airplanes, boats and real estate construction declines significantly. If such commercialization is reduced, our revenues, results of operations and financial condition could be negatively impacted.

Single source of SPD film.

Our end-product licensees require a source of SPD film to manufacture finished products. Currently, Hitachi Chemical is the sole source of commercial quantities of SPD-film. There are several other companies that are licensed to manufacture SPD-film, but they have not begun commercial production of this film. Our end-product licensees' ability to sell SPD products could be negatively impacted if there was a prolonged disruption in SPD-film availability. Such a disruption could also negatively impact our revenues, results of operations and financial condition.

We are dependent on key personnel.

Our continued success will depend, to a significant extent, on the services of our directors, executive management team, key personnel and certain key scientists. If one or more of these individuals were to leave the Company, there is no guarantee that we could replace them with qualified individuals in a timely or economically satisfactory manner or at all. The loss or unavailability of any or all of these individuals could harm our ability to execute our business plan, maintain important business relationships and complete certain product development initiatives, which would have a material adverse effect on our business, results of operations and financial conditions.

Dependence on SPD-Smart technology.

Because SPD technology is the only technology we work with, our success depends upon the viability of SPD technology which has yet to be fully proven. We have not fully ascertained the performance and long-term reliability of our technology, and therefore there is no guarantee that our technology will successfully be incorporated into all of the products which we are targeting for use of SPD technology. We expect that different product applications for SPD technology will have different performance and reliability specifications. We expect that our licensees will primarily be responsible for reliability testing, but that we may also continue to do reliability testing so that we can more effectively focus our research and development efforts towards constantly improving the performance characteristics and reliability of products using SPD technology.

Our patents and other protective measures may not adequately protect our proprietary intellectual property, and we may be infringing on the rights of others.

Our intellectual property, particularly our proprietary rights in our SPD technology, is critical to our success. We have received various patents, and filed other patent applications, for various applications and aspects of our SPD technology. In addition, we generally enter into confidentiality and invention agreements with our employees and consultants. Such patents and agreements and various other measures we take to protect our intellectual property from use by others may not be effective for various reasons generally applicable to patents and their granting and enforcement. In addition, the costs associated with enforcing patents, confidentiality and invention agreements or other intellectual property rights may be expensive. Our inability to protect our proprietary intellectual property rights or gain a competitive advantage from such rights could harm our ability to generate revenues and, as a result, our business and operations.

AVAILABLE INFORMATION

Research Frontiers files reports, proxy statements and other information with the Securities and Exchange Commission. You may read and copy such reports, proxy statements and other information at the public reference room maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549 and you can obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains an internet web site at <http://www.sec.gov> that contains reports, proxy and information statements and other information regarding issuers, such as Research Frontiers, that file electronically with the SEC. Additional information about us can also be found at our web site at <http://www.SmartGlass.com>.

The SEC allows us to incorporate by reference the information we file with them, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus, and later information that we file with the SEC will automatically update and supersede this information. We incorporate by reference into this prospectus our:

- annual report on Form 10-K for the fiscal year ended December 31, 2010,
- the portions of the proxy statement dated April 29, 2011 for our annual meeting of stockholders to be held on June 9, 2011 that have been incorporated by reference into our report on Form 10-K for the fiscal year ended December 31, 2010,
- quarterly reports on Form 10-Q for the fiscal quarters ended March 31, 2011, June 30, 2011 and September 30, 2011.
- current reports on Form 8-K filed with the SEC on 4/6/2010, 5/19/2010, 6/14/2010, 9/17/2010, 9/27/2010, 12/1/2010, 12/14/2010, 1/3/2011, 1/28/2011, 2/7/2011, 2/9/2011, 4/25/2011, 6/10/2011, 6/27/2011, 9/15/2011, 10/17/2011, 12/15/2011 and 1/10/2012 and
- the description of the capital stock contained in the Research Frontiers registration statements on Form 8-A under the Securities Exchange Act of 1934 dated July 31, 1995 and February 24, 2003.

All filings filed by Research Frontiers with the SEC under Sections 13(a), 13(c), 14, or 15(d) of the Exchange Act subsequent to the initial filing of this prospectus and prior to the termination of the offering or sale of all of common stock offered under this prospectus shall be deemed to be incorporated by reference into this prospectus.

This prospectus is part of a registration statement we filed with the SEC. As permitted by the SEC, this prospectus does not contain all of the information set forth in the registration statement and the exhibits and schedules thereto. The statements contained in this prospectus as to the contents of any contract or any other document are not necessarily complete. In each case you should refer to the copy of such contract or document filed as an exhibit to the registration statement.

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We will provide each person to whom this prospectus is delivered, a copy of any information we have incorporated by reference but have not delivered along with this prospectus. If you would like a copy of any document incorporated herein by reference, other than exhibits unless such exhibits are specifically incorporated by reference in any such document, you can call or write to us at our principal executive offices:

240 Crossways Park Drive, Woodbury, New York 11797-2033, Attention: Corporate Secretary (telephone: (516) 364-1902). We will provide this information without charge to any person, including a beneficial owner, to whom a copy of this prospectus is delivered upon written or oral request.

No dealer, salesperson or other individual has been authorized to give any information or to make any representation not contained in or incorporated by reference in this prospectus or in any supplement to this prospectus. If given or made, you must not rely on such information or representation as having been authorized by Research Frontiers. Neither the delivery of this prospectus nor any sale made hereunder will, under any circumstances, create an implication that there has not been any change in the affairs of Research Frontiers since the date of this prospectus or that the information contained herein is correct or complete as of any time after the date of this prospectus.

This prospectus and any supplement to this prospectus do not constitute an offer to sell or a solicitation of an offer to buy any securities offered hereby to any person, or by anyone, in any jurisdiction in which such offer or solicitation may not lawfully be made.

The information set forth herein and in all publicly disseminated information about Research Frontiers, includes forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, and is subject to the safe harbor created by that section. Readers are cautioned not to place undue reliance on these forward-looking statements as they speak only as of the date of this prospectus and are not guaranteed.

DIVIDENDS

Research Frontiers has never paid any cash dividends and does not expect to pay any cash dividends for the foreseeable future.

USE OF PROCEEDS

Unless we indicate otherwise in the applicable prospectus supplement, we currently intend to use the net proceeds from this offering for general corporate purposes, including our internal research and development programs, general working capital and possible future acquisitions.

We have not determined the amounts we plan to spend on any of the areas listed above or the timing of these expenditures. As a result, our management will have broad discretion to allocate the net proceeds from this offering. Pending application of the net proceeds as described above, we intend to invest the net proceeds of the offering in money market funds and other interest-bearing investments.

DESCRIPTION OF SECURITIES

We may sell from time to time, in one or more offerings common stock and/or warrants to purchase common stock.

DESCRIPTION OF COMMON STOCK

Research Frontiers can issue 100,000,000 shares of common stock, \$0.0001 par value per share. 18,907,555 shares were outstanding as of the date of this prospectus. Holders of common stock are entitled to one vote per share on matters submitted to shareholders for their approval, to dividends if declared by Research Frontiers, and to share in any distribution of Research Frontiers' assets. All outstanding shares of common stock are fully paid for and non-assessable. Holders of common stock do not have cumulative voting rights or preemptive rights. Therefore, a minority stockholder may be less able to gain representation on Research Frontiers' board of directors.

Listing

Our common stock is listed on the Nasdaq Capital Market under the symbol REFR .

Transfer Agent and Registrar

Continental Stock Transfer and Trust Company is the transfer agent and registrar for our common stock.

DESCRIPTION OF WARRANTS

The following description sets forth certain general terms and provisions of the warrants to which any prospectus supplement may relate. The particular terms of the warrants offered, the extent, if any, to which the general terms set forth below apply to the warrants offered, and any modifications or additions to the general terms as they relate to the warrants offered will be described in a prospectus supplement.

General

We may issue warrants for the purchase of common stock from time to time, and we may issue warrants independently or together with common stock, and the warrants may be attached to or separate from these securities.

We will describe in the applicable prospectus supplement the terms of the series of warrants, including:

- the offering price and aggregate number of warrants offered;
- the number of shares of common stock purchasable upon the exercise of one warrant and the price at which these shares may be purchased upon such exercise;
- the dates on which the right to exercise the warrants will commence and expire;
- the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreement and the warrants;
- the terms of any rights to redeem or call the warrants;
- any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;
- to the extent material, federal income tax consequences of holding or exercising the warrants;
- any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

Before exercising their warrants, holders of warrants will not have any of the rights of holders of common stock, including the right to receive dividends, if any, or, payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

Exercise of Warrants

Each warrant will entitle the holder to purchase the securities that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to 6:00 P.M. Woodbury, New York time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

Holders of the warrants may exercise the warrants by delivering the warrant certificate representing the warrants to be exercised together with specified information, and paying the required amount to the Company in immediately available funds. Upon receipt of the required payment and the warrant certificate properly completed and duly executed, we will issue and deliver the number of shares of common stock purchasable upon such exercise. If fewer than all of the warrants represented by the warrant certificate are exercised, then we will issue a new warrant certificate for the remaining amount of warrants. Unless we indicate otherwise in the applicable prospectus supplement, holders of the warrants may surrender securities as all or part of the exercise price for warrants.

PLAN OF DISTRIBUTION

We may sell the securities being offered hereby in one or more of the following ways from time to time:

- through dealers or agents to the public or to investors;
- to underwriters for resale to the public or to investors;
- directly to investors; or
- through a combination of such methods.

We will set forth in a prospectus supplement the terms of the offering of securities, including:

- the name or names of any agents, dealers or underwriters;
- the purchase price of the securities being offered and the proceeds we will receive from the sale;
- any over-allotment options under which underwriters may purchase additional securities from us;
- any agency fees or underwriting discounts and other items constituting agents or underwriters compensation;
- any initial public offering price;
- any discounts or concessions allowed or reallocated or paid to dealers; and
- any securities exchanges on which the securities may be listed if it is other than the Nasdaq Capital Market.

Underwriters, dealers and agents that participate in the distribution of the securities may be deemed to be underwriters as defined in the Securities Act and any discounts or commissions they receive from us and any profit on their resale of the securities may be treated as underwriting discounts and commissions under the Securities Act. We will identify in the applicable prospectus supplement any underwriters, dealers or agents and will describe their compensation. We may have agreements with the underwriters, dealers and agents to indemnify them against specified civil liabilities, including liabilities under the Securities Act. Underwriters, dealers and agents may engage in transactions with or perform services for us or our subsidiaries in the ordinary course of their businesses. Certain persons that participate in the distribution of the securities may engage in transactions that stabilize, maintain or otherwise affect the price of the securities, including over-allotment, stabilizing and short-covering transactions in such securities, and the imposition of penalty bids, in connection with an offering. Certain persons may also engage in passive market making transactions as permitted by Rule 103 of Regulation M. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded.

EXPERTS

The financial statements and schedule of Research Frontiers as of December 31, 2010 and 2009, and for each of the three years in the period ended December 31, 2010, and management's assessment of the effectiveness over internal controls as of December 31, 2010, incorporated by reference into this prospectus have been so incorporated in reliance upon the reports of BDO USA, LLP, an independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in accounting and auditing.

LEGAL MATTERS

The legality of the securities offered hereby has been passed upon by the law firm of Duane Morris LLP. As of the January 19, 2012, Victor F. Keen, a Director of the Company and Of Counsel to Duane Morris LLP owns 293,639 shares of the Company's Common Stock directly, 48,160 shares of Common Stock in his IRA, and holds options and warrants to purchase 67,500 shares of the Company's Common Stock.

Research Frontiers Incorporated

Shares of Common Stock
Warrants to Purchase Shares of Common Stock

Prospectus Supplement

Sole Book-Running Manager

Craig-Hallum Capital Group

, 2012
