

HARRIS & HARRIS GROUP INC /NY/  
Form 40-APP  
April 30, 2012

U.S. SECURITIES AND EXCHANGE COMMISSION No. 812-  
Washington, D.C. 20549

**APPLICATION FOR A CERTIFICATION PURSUANT TO SECTION 851(e) OF THE  
INTERNAL REVENUE CODE OF 1986, AS AMENDED.**

**HARRIS & HARRIS GROUP, INC.**

1450 Broadway  
24<sup>th</sup> Floor  
New York, NY 10018

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Harris & Harris Group, Inc.

1450 Broadway

24<sup>th</sup> Floor

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	New York, NY 10018

April 30, 2012

**UNITED STATES OF AMERICA**

**BEFORE THE**

**SECURITIES AND EXCHANGE COMMISSION**

*In the Matter of:*

**Harris & Harris  
Group, Inc.**

APPLICATION FOR A CERTIFICATION PURSUANT TO SECTION 851(e) OF THE  
INTERNAL REVENUE CODE OF 1986, AS AMENDED.

1450 Broadway

24<sup>th</sup> Floor

New York, NY 10018

**INTRODUCTION**

Harris & Harris Group, Inc. (“Applicant”) hereby applies to the Securities and Exchange Commission (the “Commission”), pursuant to Section 851(e) of the Internal Revenue Code of 1986, as amended (the “Code”), for a certification that Applicant is principally engaged in the furnishing of capital to other corporations which are principally engaged in the development or exploitation of inventions, technological improvements, new processes, or products not previously generally available.

Applicant proposes to qualify as a “regulated investment company” under Section 851(a) of the Code for the fiscal year ended December 31, 2011. The certification being sought is a prerequisite to qualification, pursuant to the provisions of Section 851(e) of the Code, as a regulated investment company under Section 851(a).



## I. GENERAL DESCRIPTION OF APPLICANT

Applicant was incorporated under the laws of the State of New York in August 1981 and operates as an internally managed business development company. Applicant's securities were first registered with the Commission pursuant to Section 12 of the Securities Exchange Act of 1934, as amended, in 1982. In 1992, Applicant registered with the Commission as a closed-end, non-diversified management investment company under the Investment Company Act of 1940, as amended (the "1940 Act"). On July 26, 1995, Applicant elected to become regulated as a business development company ("BDC") pursuant to Section 54(a) of the 1940 Act (the "BDC election").

Applicant's investment portfolio consists primarily of equity investments in companies that are principally engaged in the development, commercialization and integration of products enabled by nanotechnology and microsystems that are applied in industries such as computer software and hardware, telecommunications, medical devices, pharmaceuticals, biotechnology, electronics, semiconductors, advanced materials and energy. Many of Applicant's portfolio companies are privately held, thinly capitalized, unproven companies with no operating history. As of December 31, 2011, Applicant had total assets of approximately \$150 million.

The Commission has previously issued certifications pursuant to Section 851(e) of the Code that Applicant was, for the fiscal years ended December 31, 1997 and December 31, 1999 through December 31, 2010, principally engaged in the furnishing of capital to other corporations, which are principally engaged in the development or exploitation of inventions, technological improvements, new processes, or products not previously generally available.<sup>1</sup>

<sup>1</sup> *Harris & Harris Group, Inc.*, Investment Company Act Release Nos. 29736 (July 22, 2011); 28289 (May 28, 2010); 28761 (June 9, 2009); 28294 (May 30, 2008); 27870 (June 20, 2007); 27398 (June 16, 2006); 26908 (June 15, 2005); 26467 (June 15, 2004); 25990 (Apr. 2, 2003); 25454 (Mar. 7, 2002); 24888 (Mar. 8, 2001); 24314 (Feb. 24, 2000); 23102 (Apr. 6, 1998).

## II. LEGAL ANALYSIS

### A. Applicable Law

Section 851 of the Code sets forth the general requirements a corporation must satisfy in order to qualify for treatment as a regulated investment company under Subchapter M of the Code (a “RIC”). A RIC is defined in Section 851(a) as “any domestic corporation . . . which, at all times during the taxable year . . . is registered under the . . . [1940 Act] as a management company or unit investment trust or . . . has in effect an election under such Act to be treated as a business development company.” Section 851 also imposes certain conditions and limitations upon entities seeking to qualify as RICs. Section 851(b)(3)(A) provides that an investment company or BDC seeking to qualify for treatment as a RIC must, as of the close of each quarter of the taxable year, have at least 50 percent of the value of its total assets represented by

cash and cash items (including receivables), Government securities and securities of other regulated investment companies, and . . . other securities for purposes of this calculation limited, except and to the extent provided in subsection [851](e), in respect of any one issuer to an amount not greater in value than 5 percent of the value of the total assets of the taxpayer and to not more than 10 percent of the outstanding voting securities of such issuer . . . .

The 1940 Act generally imposes no similar diversification requirements.

Section 851(e) provides an exemption from the diversification requirements of Subchapter M for certain investment companies furnishing capital to certain development corporations. In pertinent part, Section 851(e) provides that

[i]f the . . . Commission determines, in accordance with regulations issued by it, and certifies to the Secretary not earlier than 60 days prior to the close of the taxable year of a management company or a business development company . . . that such investment company is principally engaged in the furnishing of capital to other corporations which are principally engaged in the development or exploitation of inventions, technological developments, new processes, or products not previously generally available, such investment company may, in the computation of 50 percent of the value of its assets under subparagraph (A) of subsection (b)(3) for any quarter of such taxable year, include the value of any securities of an issuer, whether or not the investment company owns more than 10 percent of the outstanding voting securities of such issuer, the basis of which, when added to the basis of the investment company for securities of such issuer previously acquired, did not exceed 5 percent of the value of the total assets of the investment company at the time of the subsequent acquisition of securities.

## **B. Need for Relief**

Applicant's board of directors has determined that it would be in the best interests of Applicant and its shareholders for Applicant to qualify for treatment as a RIC for the fiscal year ended December 31, 2011. Since its BDC election, Applicant has invested a substantial percentage of its total assets in early-stage development, or start-up, companies (the portfolio companies are more fully described below) in a broad range of industry segments that are primarily engaged in the development, commercialization and integration of products enabled by nanotechnology and microsystems that are applied in industries such as computer software and hardware, telecommunications, medical devices, pharmaceuticals, biotechnology, electronics, semiconductors, advanced materials and energy (each a "Portfolio Company" and together the "Portfolio Companies"). Given the inherent nature of start-up and early-stage development companies, many of the Portfolio Companies are thinly capitalized, unproven companies that lack management depth and have no operating history. As a consequence, Applicant, in addition to providing capital to the Portfolio Companies, may also assist with the development of financial plans for the companies, recruiting and hiring management, as well as providing management expertise. Given Applicant's level of involvement in many of the Portfolio Companies, Applicant may, from time to time, own a majority of the equity securities of a given Portfolio Company. Thus, without the relief requested, Applicant may be unable to satisfy the requirements of Section 851(b)(3)(A). This result would have a deleterious impact on Applicant's shareholders by reducing Applicant's income without achieving any concomitant policy objective.

**1. Investment Portfolio**

As stated above, Applicant has invested a substantial portion of its assets in early stage companies primarily engaged in the development, commercialization and integration of products enabled by nanotechnology and microsystems that are applied in industries such as computer software and hardware, telecommunications, medical devices, pharmaceuticals, biotechnology, electronics, semiconductors, advanced materials and energy. Applicant believes that most of those companies satisfy the requirements of section 851(e) of the Code. In reaching this conclusion, the Applicant generally has relied upon information provided by the Portfolio Companies themselves and others, including but not limited to, offering circulars, prospectuses, analyst reports, internal company memoranda, patent applications and similar documents. In addition, Applicant generally is represented on the boards of directors of the Portfolio Companies through member or observer status and also has direct access to senior management of those companies through contractual information rights.



The following table shows the composition of Applicant's total assets as of the end of each calendar quarter of 2011:

	3/31/2011	6/30/2011	9/30/2011	12/31/2011
A. Investments in "eligible portfolio companies" described in Section 2(a)(46) of the 1940 Act and believed by the Applicant to be engaged in the business activities required by Section 851(e) of the Code	\$92,738,239	\$128,181,634	\$96,672,664	\$108,233,787 <sup>2</sup>
B. Investments in "eligible portfolio companies" described in Section 2(a)(46) of the 1940 Act and treated by Applicant as not engaged in the business activities required by Section 851(e) of the Code	-	-	-	-
C. Investments that do not qualify under Section 55(a) of the 1940 Act, but as to which the issuers are believed by Applicant to be engaged in the business activities required by Section 851(e) of the Code <sup>3</sup>	\$5,020,750	\$3,705,648	\$3,460,896	\$4,814,463
D. Investments that do not qualify under Section 55(a) of the 1940 Act and treated by Applicant as not covered by Section 851(e) of the Code	-	-	-	-
E. Cash, cash items and securities as set forth in Section 55(a)(6) of the 1940 Act, collectively "Cash Equivalents"	\$46,250,582	\$37,500,182	\$36,902,603	\$33,841,394
Total Investments and Cash Equivalents	\$144,009,571	\$169,387,464	\$137,036,163	\$146,889,644
Other Assets	\$6,164,704	\$3,996,758	\$3,016,546	\$3,454,009
Total Assets	\$150,174,275	\$173,384,222	\$140,052,709	\$150,343,653

<sup>2</sup> This value includes the fair value of rights to milestone payments from the acquisition of BioVex Group, Inc., by Amgen, Inc. We do not include these rights as a portfolio company in Section 2.

<sup>3</sup>As of December 31, 2011, the investments in this category were D-Wave Systems, Inc., and the portion of NeoPhotonics Corporation purchased in the initial public offering.

As demonstrated above, as of December 31, 2011, 94.5% of Applicant's total assets consisted of assets of the type set forth in paragraphs 1 through 6 of Section 55(a) of the 1940 Act. Such assets comprise 96.7% of Applicant's invested assets.

## 2. Portfolio Companies

As reflected in the table above, companies engaged in the type and degree of business activities described in Section 851(e) of the Code, excluding the investments in issuers described in Categories B. and D. above, ("Development Companies") comprised the following percentages of the total assets less Cash Equivalents of Applicant at the end of each of the calendar quarters of 2011: March 31, 94.1%; June 30, 97.1%; September 30, 97.1%; and December 31, 97.0%. The Development Companies are discussed below. Unless otherwise indicated below, information is provided as of December 31, 2011.

ABSMaterials, Inc. ("ABS")(Category A) — ABS develops reactive glass products and nanosands for remediation, or site-cleanups, of volatile organic and related spills, plumes and gas discharges. Once having captured a spill, ABS' materials can be recovered safely and inexpensively and can be recycled for future use by heat-mediated removal of the captured organic chemical compounds.

**Percentage of Equity held by Applicant<sup>4</sup>** — Between 5%-25%

**Investment Value / Percentage of Applicant's Total Assets** — \$1,560,000 / 1.4%

**Date of Initial Investment** — January 15, 2010

<sup>4</sup> Percentage of Equity for all Portfolio Companies held by Applicant is reported on a voting equity basis. The range of equity held by Applicant that is reported matches those ranges reported in the Applicant's annual and quarterly financial statements on Form 10-K and 10-Q, respectively.

Adesto Technologies Corporation (“Adesto”)(Category A) — Adesto develops non-volatile memory technology enabled by nanoscale phenomena. The company's technology addresses several problems that limit the capabilities of certain traditional memory technologies, including the ability to scale the devices as standard chip dimensions shrink, the ability to increase speed of operation and the ability to decrease power consumption.

**Percentage of Equity held by Applicant** — Between 5%-25%

**Investment Value / Percentage of Applicant’s Total Assets** — \$7,676,648 / 5.1%

**Date of Initial Investment** — February 21, 2007

Ancora Pharmaceuticals Inc. (“Ancora”)(Category A) — Ancora develops synthetic carbohydrates enabled by its proprietary technology for rapid milligram to kilogram production of complex carbohydrates. The company uses this technology internally and through partnerships with pharmaceutical and biotechnology companies to pursue drug and vaccine development programs.

**Percentage of Equity held by Applicant** — Above 25%

**Investment Value / Percentage of Applicant’s Total Assets** — \$4,310,817 / 2.9%

**Date of Initial Investment** — May 3, 2007

Bridgelux, Inc. (“Bridgelux”)(Category A) — Bridgelux develops high-power, indium gallium nitride light emitting diodes and arrays that are used in various solid-state lighting applications. Bridgelux technology permits a highly reliable epitaxy structure and a robust chip and array design that enable commercially acceptable performance under severe operating conditions such as high current density and high thermal stress that adversely affect most high-power devices.

**Percentage of Equity held by Applicant** — Less than 5%

**Investment Value / Percentage of Applicant's Total Assets** — \$8,452,452/ 5.6%

**Date of Initial Investment** — May 20, 2005

*Cambrios Technology Corp. ("Cambrios")*(Category A) — Cambrios develops flexible, transparent conductive surfaces that can be deposited from solution onto any substrate in a roll-to-roll manufacturing process. Metallic nanowires are used as the conductive medium because they minimize the absorption and scattering of visible light. Roll-to-roll manufacturing processes are cost-effective solutions for high volume manufacturing and do not require expensive specialized equipment that is required by the incumbent material, indium-tin-oxide.

**Percentage of Equity held by Applicant** — Less than 5%

**Investment Value / Percentage of Applicant's Total Assets** — \$2,401,635 / 1.6%

**Date of Initial Investment** — November 9, 2004

Cobalt Technologies, Inc. (“Cobalt”) (Category A) — Cobalt develops biobutanol, a high-volume, high-value industrial chemical and next-generation biofuel. Cobalt's proprietary technologies in microbial physiology, strain development, fermentation and low-energy fuel separation enable it to produce a new generation of fuels that burn cleaner, are more cost-effective, and enhance environmental sustainability. By optimizing productivity, titer and yield, it is seeking to make its biobutanol an affordable substitute to butanol produced from petroleum.

**Percentage of Equity held by Applicant** — Less than 5%

**Investment Value / Percentage of Applicant’s Total Assets** — \$250,588 / less than 1%

**Date of Initial Investment** — October 7, 2008

Contour Energy Systems, Inc. (“Contour”)(Category A) – Contour, formerly CFX Battery, Inc., and Lifco, Inc., develops primary and rechargeable batteries using a novel variation of existing battery chemistry that is enabled by nanotechnology. The company expects to use its proprietary nanotechnology to deliver low-cost batteries with superior performance, safety and weight. On February 24, 2010, CFX Battery, Inc., changed its name to Contour Energy Systems, Inc. On February 28, 2008, Lifco merged with CFX Battery, Inc., to form CFX Battery, Inc.

**Percentage of Equity held by Applicant** — Between 5%-25%

**Investment Value / Percentage of Applicant’s Total Assets** — \$4,636,260 / 3.1%

**Date of Initial Investment** — June 21, 2007

Champions Oncology, Inc. (“Champions”)(Category A) — Champions develops advanced technology solutions to personalize the development and use of oncology drugs. Champions’ Tumorgraft™ (CTG) Technology Platform is a novel approach based upon the implantation of primary human tumors in immune-deficient mice followed by propagation of the resulting engraftments, or Tumorgrafts™, in a manner that preserves the biological characteristics and nanoscale morphology of the original human tumor. Champions Oncology uses CTG technology in both its Personalized Oncology Solutions and Translational Oncology Solutions.

**Percentage of Equity held by Applicant** — Between 5%-25%

**Investment Value / Percentage of Applicant’s Total Assets** — \$1,973,334 / 1.3%

**Date of Initial Investment** — April 4, 2011

D-Wave Systems, Inc. (“D-Wave”)(Category C) — D-Wave develops high-performance quantum computing systems for commercial use in logistics, bioinformatics, life and physical sciences, quantitative finance and electronic design automation. Its analog computing approach enabled by quantum mechanics enables the solution of problems that are difficult or impossible to solve using existing digital computing technologies.

**Percentage of Equity held by Applicant** — Less than 5%

**Investment Value / Percentage of Applicant’s Total Assets** — \$4,585,463 / 3.1%

**Date of Initial Investment** — April 19, 2006

Ensemble Therapeutics Corporation (“Ensemble”)(Category A) – Ensemble develops DNA Programmed Chemistry (“DPC”) for the discovery of new classes of therapeutics. DPC provides unprecedented control of chemical reactivity, enabling the synthesis of diverse libraries of compounds for use in drug discovery internally and through partnerships with pharmaceutical and biotechnology companies. On June 9, 2010, Ensemble Discovery Corporation changed its name to Ensemble Therapeutics Corporation.

**Percentage of Equity held by Applicant** — Less than 5%

**Investment Value / Percentage of Applicant’s Total Assets** — \$1,298,436 / Less than 1%

**Date of Initial Investment** — June 6, 2007

Enumeral Biomedical Corporation (“Enumeral”)(Category A) – Enumeral develops high-value opportunities in immunology including therapeutic discovery, immune profiling and personalized medicine. The company's proprietary technology enables the isolation and study of chemicals and proteins produced by individual human cells simultaneously in a highly parallel format. On November 18, 2010, Enumeral Technologies, Inc., changed its name to Enumeral Biomedical Corporation.

**Percentage of Equity held by Applicant** — Between 5%-25%

**Investment Value / Percentage of Applicant’s Total Assets** — \$1,110,164 / Less than 1%

**Date of Initial Investment** — December 23, 2009



GEO Semiconductor, Inc. (“GeoSemi”)(Category A) — GeoSemi develops semiconductor devices that enable in-stream sub-pixel processing (ISSP). This technology enables correction of optical and illumination aberrations that are inherent to nanotechnology-enabled solutions used in displays (LED backlights) and digital cameras (high-density, small form-factor image sensors). These technologies suffer from non-uniformities in color, brightness and sensitivity. GeoSemi’s ISSP processors can correct these issues, thereby enabling the use of nanotechnology-enabled solutions in a range of products, while reducing overall system costs.

**Percentage of Equity held by Applicant<sup>5</sup> — 0%**

**Investment Value / Percentage of Applicant’s Total Assets — \$693,735 / Less than 1%**

**Date of Initial Investment — September 17, 2010**

HzO, Inc. (“HzO”)(Category A) — HzO manufactures novel industrial coatings. HzO’s technology is a unique process to create a nanoscale coating that protects electronics against damage caused by exposure to water, which is the leading cause of lost function in electronics. The coating is transparent and can be applied to a variety of surfaces including plastic, metal and glass. In addition to water repellence, the coating can repel oils, synthetic fluids, hazardous materials, dust and dirt.

**Percentage of Equity held by Applicant – Between 5%-25%**

**Investment Value / Percentage of Applicant’s Total Assets — \$2,230,244 / 1.5%**

**Date of Initial Investment – August 12, 2011**

<sup>5</sup> The investment is a senior secured debt security through a participation agreement with Montage Capital. The senior secured debt security is not a voting security.



*Kovio, Inc. (“Kovio”)(Category A)* — Kovio is developing a new category of semiconductor products using printed electronics and thin-film technologies. Printed electronics enable fabrication of semiconductor devices over large areas, on flexible substrates, and at a fraction of the cost of conventional silicon technology. The initial target application is the production of ultra-low cost RFID tags for the retail industry, transit tickets, library inventory control, asset management, manufacturing, and logistics.

**Percentage of Equity held by Applicant** — Between 5%-25%

**Investment Value / Percentage of Applicant’s Total Assets** — \$2,855,825 / 1.9%

**Date of Initial Investment** — November 4, 2005

*Laser Light Engines, Inc. (“LLE”)(Category A)* — LLE designs and manufactures ultra-high-brightness, solid-state light sources for digital cinema and large-venue projection displays. LLE uniquely combines laser technology, non-linear optics, specialty optical fibers, digital control and applications knowledge to produce its laser-driven light engines.

**Percentage of Equity held by Applicant** — Above 25%

**Investment Value / Percentage of Applicant’s Total Assets** — \$2,566,749 / 1.7%

**Date of Initial Investment** — May 6, 2008

*Mersana Therapeutics, Inc. (“Mersana”)(Category A)* — Mersana is a pharmaceutical company developing cancer therapeutics using an advanced drug delivery system. Mersana uses fully biodegradable, nanoscopic drug delivery vehicles based on proprietary molecular constructs and “biological stealth” materials.

**Percentage of Equity held by Applicant** — Between 5%-25%

**Investment Value / Percentage of Applicant's Total Assets** — \$1,442,871 / 1%

**Date of Initial Investment** — February 12, 2002

Metabolon, Inc. ("Metabolon")(Category A) — Metabolon uses a proprietary technology platform in metabolomics to map changes in metabolic pathways for the identification of biomarkers and the early diagnosis of disease states. Metabolomics is the study of the repertoire of non-proteinaceous, endogenously synthesized small molecules present in an organism. Metabolon's platform uses mass-spectrometry based technologies, data integration and propriety software.

**Percentage of Equity held by Applicant** — Between 5%-25%

**Investment Value / Percentage of Applicant's Total Assets** — \$6,098,063 / 4.1%

**Date of Initial Investment** — January 11, 2006

Molecular Imprints, Inc. ("Molecular")(Category A) — Molecular develops and manufactures nanoimprint-based lithography technology and systems for manufacturing nano scale features useful in hard disk drives, optical components and semiconductor devices. Its technology overcomes limitations of optical lithography and enables the continued reduction of the dimensions of components that enable products in these markets.

**Percentage of Equity held by Applicant** — Less than 5%

**Investment Value / Percentage of Applicant's Total Assets** — \$6,960,944 / 4.6%

**Date of Initial Investment** — March 31, 2004



Nanosys, Inc. (“Nanosys”)(Category A) — Nanosys develops novel and patent-protected nanostructures that integrate functional complexity directly into each individual nanostructure. This capability enables the low-cost fabrication of revolutionary high-value, high-performance applications in a broad range of industries including life sciences, physical sciences, information technology, communications, renewable energy and homeland security. The initial applications include color filters for light emitting diodes and materials for lithium-ion batteries.

**Percentage of Equity held by Applicant** — Less than 5%

**Investment Value / Percentage of Applicant’s Total Assets** — \$1,450,486 / 1.0%

**Date of Initial Investment** — April 10, 2003

NanoTerra, Inc. (“NanoTerra”)(Category A) — NanoTerra seeks to leverage an exclusive license to the extensive suite of intellectual property that enables nanomanufacturing and patterning developed in the laboratory of Prof. George Whitesides of Harvard University by establishing partnerships with companies in a wide variety of industries, including electronics, aerospace, energy, industrial products, and consumer goods, as well as government agencies. Key components of its technology platform include surface engineering techniques (such as soft lithography, self-assembly, and surface chemistry), and nanomaterials.

**Percentage of Equity held by Applicant<sup>6</sup>** — 0%

**Investment Value / Percentage of Applicant’s Total Assets** — \$555,164 / Less than 1%

**Date of Initial Investment** — February 22, 2011

<sup>6</sup> The investment is a senior secured debt security and consequently has no voting equity.

Nantero, Inc. ("Nantero")(Category A) — Nantero is currently developing NRAM™ high-density nonvolatile random access memory chip using patented nanotechnology. The NRAM™ design uses carbon nanotubes as the active memory elements, and Nantero is developing a straightforward way to manufacture the memory chip and integrate it with standard semiconductor processes. Potential applications for Nantero's non-volatile memory include instant-on computers, radiation-hardened memory and data storage in devices such as MP3 players, digital cameras, and smartphones.

**Percentage of Equity held by Applicant** — Less than 5%

**Investment Value / Percentage of Applicant's Total Assets** — \$1,684,807 / 1.1%

**Date of Initial Investment** — August 13, 2001

NeoPhotonics Corporation ("NEO") (Category A and <sup>7</sup>C) — NEO uses its patented nanomaterials deposition technology to enable the true integration of planar optical components, by developing and manufacturing planar optical devices and components for the leading optical component manufacturers. The company, a recognized leader in nanomaterials synthesis processes, has developed commercial production systems for planar deposition and optical materials integration. Its Laser Reactive Deposition (LRD™) technology is the only commercial manufacturing process capable of producing the full complement of active and passive glass materials used to produce optical amplifiers, waveguide lasers, and passive planar waveguides. On February 2, 2011, NEO priced its initial public offering of 7,500,000 shares of common stock at \$11 per share. As of that date, the company's common stock trades on the New York Stock Exchange under the symbol NPTN.

<sup>7</sup> The portion of our investment that was purchased in the IPO is included in Category C.

**Percentage of Equity held by Applicant** — Less than 5%

**Investment Value / Percentage of Applicant's Total Assets** — \$2,065,154 / 1.4%

**Date of Initial Investment** — December 5, 2003

*Nextreme Thermal Solutions, Inc. ("Nextreme")* (Category A) — Nextreme develops high-performance, thin-film, thermoelectric ("TE") devices for both discrete and integrated cooling and power generation applications. A thermoelectric module is a semiconductor-based electronic component that functions as a small, solid-state heat pump. This cooling capability is ideally suited for applications where temperature stabilization, temperature cycling, or cooling below ambient temperatures are required. Applications of TE modules include cooling of microprocessors, power semiconductors, medical devices and optical communications devices as well as power generation by scavenging of waste heat.

**Percentage of Equity held by Applicant** — Between 5%-25%

**Investment Value / Percentage of Applicant's Total Assets** — \$0 / 0%

**Date of Initial Investment** — December 7, 2004



Produced Water Absorbents, Inc. (“PWA”)(Category A) — PWA improves the resource recovery and environmental protections of drilling and mining operations through the use of its reactive glass products and nanosands (Osorb) for treating produced and flowback water on-site. PWA is creating commercial solutions in silica-based sol-gel solids, also referred to as swellable glass. The materials are designed such that non-polar liquids (e.g., oils) are absorbed selectively over polar liquids (e.g., water). These silica-based materials are highly stable, hydrophobic and capable of capturing and recovering a range of hydrocarbons and pervasive solvents including TCEs, organic acids and BTEX.

**Percentage of Equity held by Applicant** – Between 5%-25%

**Investment Value / Percentage of Applicant’s Total Assets** — \$1,000,000 / Less than 1%

**Date of Initial Investment** — June 21, 2011

Senova Systems, Inc. (“Senova”)(Category A) — Senova develops next-generation sensors to measure pH, which is a fundamental property of nature. Senova’s sensors address several limitations of the current technology, including that it does not require calibration, it is not subject to fouling and it does not drift with changes in temperature. The platform technology can be used for a variety of applications, including industrial processing, single use bioprocessing, and advanced analytical systems.

**Percentage of Equity held by Applicant** – Between 5%-25%

**Investment Value / Percentage of Applicant’s Total Assets** — \$692,308 / Less than 1%

**Date of Initial Investment** – September 9, 2011

SiOnyx, Inc. ("SiOnyx")(Category A) — SiOnyx develops silicon-based optoelectronic products enabled by its proprietary process that makes "black silicon." Black silicon is the result of the interaction of a femtosecond laser pulse with silicon in the presence of sulfur hexafluoride to create a thin layer of highly doped silicon with nanocrystalline domains. Black silicon has high absorptive properties to visible wavelengths and also absorbs in the infrared, enabling its use in photodetectors, imaging arrays and potentially high-efficiency solar cells.

**Percentage of Equity held by Applicant** — Between 5%-25%

**Investment Value / Percentage of Applicant's Total Assets** — \$6,520,162 / 4.3%

**Date of Initial Investment** — May 12, 2006

Solazyme, Inc. ("Solazyme")(Category A) — Solazyme is a biotechnology company devoted to harnessing the energy-harvesting machinery of algae to produce valuable products. The company utilizes proprietary genetic engineering methods to develop commercially relevant, sugar-driven biochemical pathways to produce molecules for the energy, chemical, pharmaceutical and nutraceutical industries. On May 27, 2011, Solazyme priced its initial public offering of 10,975,000 shares of common stock at \$18 per share. As of that date, the company's common stock trades on the Nasdaq Global Select Market under the symbol SZYM.

**Percentage of Equity held by Applicant** — Less than 5%

**Investment Value / Percentage of Applicant's Total Assets** — \$27,419,373 / 18.2%

**Date of Initial Investment** — November 24, 2004

Ultora, Inc. (“Ultora”)(Category A) — Ultora develops a class of energy-storage devices called super-capacitors based on catalyst-free, purified carbon nanotubes (CNT) as the enabling element in the device.

**Percentage of Equity held by Applicant** – Between 5%-25%

**Investment Value / Percentage of Applicant’s Total Assets** — \$215,000 / Less than 1%

**Date of Initial Investment** — December 14, 2010

Xradia, Inc. (“Xradia”)(Category A) — Xradia commercializes ultra-high-resolution 3D x-ray microscopes and fluorescence imaging systems. Xradia’s proprietary x-ray optics enable the development of extremely high-resolution x-ray microscope systems having wide application in fields, including semiconductor development and inspection, advanced materials, environmental science, nanotechnology and life sciences.

**Percentage of Equity held by Applicant** — Between 5%-25%

**Investment Value / Percentage of Applicant’s Total Assets** — \$6,978,777 / 4.6%

**Date of Initial Investment** — December 29, 2006

### **3. Existence of Cash Positions**

Applicant is an opportunistic investor that ideally would be as fully invested as practicable in the securities of its target Portfolio Companies. From time to time, however, Applicant may maintain a substantial portion of its assets in Cash Equivalents. Applicant does not believe it is in its shareholders’ best interest to make investments solely for the purpose of reducing its cash positions. Applicant invests in a highly specialized area (nanotechnology and microsystems) in which appropriate investment opportunities are not always extant and, when identified, require significant diligence before an investment decision can be made. In fact, in 2011, Applicant actively reviewed over 300 potential investments.



As evidenced in the table below, Applicant made a number of investments in 2011, both in new Portfolio Companies and in the form of “follow-on” investments in existing Portfolio Companies. In addition, Applicant expects investment activity to continue in 2012, and Applicant believes that a number of additional investments will likely be made before the end of the year.

It is important to note that Applicant has no motive, indeed has a great disincentive, to maintain a significant position in cash. Most notably, cash is a very unattractive asset class in terms of investment return. The higher the level of cash, the greater its potentially depressing impact on the overall internal rate of return of Applicant. Thus, Applicant believes that relying on cash as an asset class for investment returns would ultimately have an extremely negative effect on shareholders and, thus, ultimately on the market price of Applicant’s stock.

**Harris & Harris Group, Inc.****Equity Securities / Debt Investments**

Date	Company	Shares/Face	Description	Follow-on	New	Total	By Quarter
01/27/11	Bridgelux, Inc.	\$ 813,805	Bridge Note	\$ 813,805		\$ 813,805	
02/02/11	NeoPhotonics Corporation	50,000	Common Stock	\$ 550,000		\$ 550,000	
02/22/11	Nano-Terra, Inc.	\$ 750,000	Senior Secured Debt		\$ 750,000	\$ 750,000	
03/01/11	GEO Semiconductor, Inc.	\$ 150,000	Subordinated Secured Non-Convertible Debt	\$ 150,000		\$ 150,000	
03/03/11	Innovalight, Inc.	\$ 272,369	Bridge Note	\$ 272,369		\$ 272,369	
04/01/11	Cobalt Technologies, Inc.	\$ 121,560	Bridge Note	\$ 121,560		\$ 121,560	
04/04/11	Champions Oncology, Inc.	2,666,667	Common Stock		\$ 2,000,000	\$ 2,000,000	
04/12/11	Mersana Therapeutics, Inc.	\$ 298,900	Bridge Note	\$ 298,900		\$ 298,900	
04/15/11	Molecular Imprints, Inc.	\$ 866,668	Bridge Note	\$ 866,668		\$ 866,668	
04/18/11	Adesto Technologies Corporation	\$ 445,659	Bridge Note	\$ 445,659		\$ 445,659	
04/19/11	Enumeral Biomedical Corp.	870,832	Series A Preferred	\$ 650,000		\$ 650,000	
04/26/11	Ultora, Inc.	64,500	Series A Preferred	\$ 63,250		\$ 63,250	
05/11/11	Kovio, Inc.	1,341,001	Series B' Preferred	\$ 892,315		\$ 892,315	
							<b>\$ 2,536,174</b>

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05/13/11	Ancora Pharmaceuticals Inc.	\$ 200,000	Bridge Note	\$ 200,000	\$ 200,000
06/09/11	Molecular Imprints, Inc.	\$ 481,482	Bridge Note	\$ 481,482	\$ 481,482

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Date	Company	Shares/Face	Description	Follow-on	New	Total	By Quarter
06/15/11	Enumeral Biomedical Corp.	86,206	Series A Preferred	\$99,999		\$99,999	
06/16/11	Contour Energy Systems, Inc.	688,995	Series C Preferred	\$720,000		\$720,000	
06/21/11	Produced Water Absorbents, Inc.	1,000,000	Series A Preferred		\$1,000,000	\$1,000,000	
06/29/11	Ancora Pharmaceuticals Inc.	\$100,000	Bridge Note	\$100,000		\$100,000	
06/29/11	Innovalight, Inc.	\$181,579	Bridge Note	\$181,579		\$181,579	
							<b>\$ 8,121,412</b>
07/06/11	Adesto Technologies Corporation	2,122,187	Series C Preferred	\$1,032,058		\$1,032,058	
07/27/11	Ancora Pharmaceuticals Inc.	\$500,000	Bridge Note	\$500,000		\$500,000	
08/12/11	HzO, Inc.	4,057,294	Series A Preferred		\$1,666,667	\$1,666,667	
		3,947,888	Series B Preferred				
08/19/11	Ultora, Inc.	150,500	Series A Preferred	\$150,500		\$150,500	
08/25/11	Metabolon, Inc.	835,882	Series D Preferred	\$1,499,999		\$1,499,999	
09/09/11	Senova Systems, Inc.	692,308	Series B Preferred		\$692,308	\$692,308	
							<b>\$ 5,541,532</b>
10/07/11	Laser Light Engines, Inc.	\$200,000	Bridge Note	\$200,000		\$200,000	
10/21/11	Bridgelux, Inc.	\$538,945	Bridge Note	\$538,945		\$538,945	
10/24/11	ABSMaterials, Inc.	15,000	Series A Preferred	\$60,000		\$60,000	
10/28/11	Mersana Therapeutics, Inc.	\$25,000	Bridge Note	\$25,000		\$25,000	
10/28/11		\$200,000	Bridge Note	\$200,000		\$200,000	



Ancora  
Pharmaceuticals Inc.

11/17/11	Mersana Therapeutics, Inc.	\$ 25,000	Bridge Note	\$ 25,000	\$ 25,000
11/17/11	Laser Light Engines, Inc.	\$ 95,652	Bridge Note	\$ 95,652	\$ 95,652

Date	Company	Shares/Face	Description	Follow-on	New	Total	By Quarter
12/07/11	D-Wave Systems, Inc.	\$ 337,579	Bridge Note	\$337,579		\$337,579	
12/13/11	Ancora Pharmaceuticals Inc.	800,000 \$ 500,000	Series A' Preferred & Senior Secured Debt	\$1,300,000		\$1,300,000	
12/21/11	Laser Light Engines, Inc.	\$ 82,609	Bridge Note	\$82,609		\$82,609	
12/22/11	Mersana Therapeutics, Inc.	\$ 25,000	Bridge Note	\$25,000		\$25,000	
							<b>\$ 2,889,785</b>
				\$12,979,928	\$6,108,975	\$19,088,903	<b>\$ 19,088,903</b>

### C. Certification Requested

Applicant hereby requests, pursuant to Section 851(e) of the Code, a certification that it is principally engaged in the furnishing of capital to other corporations that are principally engaged in the development or exploitation of inventions, technological improvements, new processes, or products not previously generally available. Applicant's board of directors has determined that it is in the best interests of Applicant and its shareholders to qualify as a RIC. Among other things, RIC qualification would permit Applicant to avoid taxation at the corporate level. However, based upon the composition of Applicant's investment portfolio and in the absence of the requested certification, Applicant may not satisfy the diversification requirements of Subchapter M as set forth in Section 851(b)(3)(A) of the Code. Thus, without the requested certification, Applicant may not be able to qualify as a RIC.

### D. Precedents

The present request by Applicant is substantially identical to its requests for certifications submitted for the tax years ending December 31, 1997 and December 31, 1999 through December 31, 2010, which the Commission granted.<sup>8</sup> Moreover, the Commission has issued certifications pursuant to Section 851(e) of the Code in the past to, among others, Greater Washington Investors, Inc.,<sup>9</sup> American Enterprise Development Corp.,<sup>10</sup> Boston Capital Corp. — Boston Capital Small Business Investment Corp.,<sup>11</sup> and American Research & Development Corp.<sup>12</sup>

<sup>8</sup> *See supra*, n. 1.

<sup>9</sup> Greater Washington Investors, Inc. (File No. 811-1622), Investment Company Act Release No. 6604 (July 2, 1971) (certification).

<sup>10</sup> American Enterprise Development Corp. (File No. 811-1543), Investment Company Act Release No. 6501 (May 3, 1971) (certification).

<sup>11</sup> Boston Capital Corp., Boston Capital Small Business Investment Corp. (File No. 811-1650), Investment Company Act Release No. 6054 (May 14, 1970) (certification).

<sup>12</sup> American Research & Development Corp. (File No. 811-4817), Investment Company Act Release No. 4817 (Jan. 12, 1967) (certification).

**E. Applicant's Legal Arguments**

Given the nature of the companies in which Applicant has invested the majority of its assets as well as the benefit for Applicant and its shareholders for Applicant to be able to elect to be subject to taxation under Subchapter M, it is appropriate for the Commission to issue the requested certification pursuant to Section 851(e) of the Code. Section 851(e) was intended to foster the development of companies that “are principally engaged in the development or exploitation of inventions, technological improvements, new processes or products not previously generally available . . . .”<sup>13</sup> Accordingly, Section 851(e) is available to those investment companies that are “principally engaged in the development or exploitation of inventions, technological developments, new processes or products not previously generally available . . . .” In determining whether an investment company is ‘principally engaged’ in investing in such companies, the Commission is to give

consideration . . . to the purpose and function of the investment company and to its continuing over-all operation. Ordinarily, for example, it would be requisite that a major portion of the assets of the investment company represent securities in operating companies developing and exploiting new processes and products.<sup>14</sup>

<sup>13</sup> The Revenue Act of 1951, Pub. L. No. 82-183, § 337, 65 Stat. 452 (1951).

<sup>14</sup> *Id.*

In the case of Applicant, as of December 31, 2011, approximately 97% of its total assets less Cash Equivalents were invested in the securities of companies engaged in the type and degree of business activities described in Section 851(e). Applicant, furthermore, is committed to continuing investing in such companies.

The Portfolio Companies are consistent with the types of companies that Congress envisioned when it enacted Section 851(e). As noted in connection with the enactment of Section 851(e), “[a]n operating company will not be considered to be engaged in the development of new processes or products merely because the process or development is new to the [operating] company.<sup>15</sup> Rather, the process or invention developed by the operating company the investment company has invested in “must represent a substantial technological improvement, or be different to a material degree from a product previously available.<sup>16</sup> The investments of Applicant at issue here fall squarely within the types of portfolio investments identified by Congress as the intended beneficiaries of Section 851(e). The Portfolio Companies are companies that are engaged in pioneering research into a variety of new technical and medical advances that previously have not been available. The advances being developed by the Portfolio Companies range from the development of high-efficiency solar cells and renewable fuels and chemicals to novel therapies for cancer. The technologies being developed by each of the Portfolio Companies represent material advancements in each of the companies’ respective industries; they do not represent mere changes in style or new models.

<sup>15</sup> *Id.*

<sup>16</sup> *Id.*

Given the composition of Applicant's investment portfolio, Applicant may need to rely upon the provisions of Section 851(e) in order to qualify as a RIC. Obtaining the requested certification is a prerequisite to relying upon Section 851(e). Moreover the Commission, and only the Commission, has been authorized to issue such a certification. Thus, for Applicant to rely upon Section 851(e), the Commission must issue the requested certification.<sup>17</sup> For the reasons set forth above, we believe that it is appropriate in the public interest and consistent with the best interests of Applicant's shareholders for the Commission to issue the requested certification pursuant to Section 851(e), and hereby request that such certification be issued.

Applicant represents that the limitation of Section 851(e)(2) does not apply to it. That provision generally makes Section 851(e) unavailable to an investment company if more than 25% of the value of its total assets is represented<sup>17</sup> by securities of issuers with respect to each of which the company holds more than 10% of the outstanding voting securities and in respect of each of which the company has held any security for 10 or more years.

### III. COMMUNICATIONS

Please address all communications concerning this application and the Notice and Order to:

Daniel B. Wolfe

President & Chief Operating Officer

Harris & Harris Group, Inc.

1450 Broadway

24<sup>th</sup> Floor

New York, NY 10018

Please address any questions concerning this application and a copy of any communications, Notice, or Order to:

Steven B. Boehm, Esq.

Sutherland Asbill & Brennan LLP

1275 Pennsylvania Avenue, N.W.

Washington, D.C. 20004-2415

Sandra M. Forman, Esq.

General Counsel

Harris & Harris Group, Inc.

1450 Broadway

24<sup>th</sup> Floor

New York, NY 10018



#### IV. AUTHORIZATION

Under New York law and the Articles of Incorporation and bylaws of Applicant, the Applicant's business and affairs are to be conducted by its board of directors. In accordance with New York law and the Articles of Incorporation and bylaws of Applicant, a resolution was adopted by Applicant's board of directors authorizing the appropriate officers of Applicant to prepare, execute, and file with the Commission this Application for a certification pursuant to Section 851(e) of the Code. A copy of the resolution is attached hereto as Exhibit A. Accordingly, the persons signing and filing this Application have been duly authorized to do so.

Applicant has caused this Application to be duly signed on its behalf in the county of New York in the City of New York on the 30th day of April, 2012.

HARRIS & HARRIS GROUP, INC.

By: /s/ Daniel B. Wolfe  
Daniel B. Wolfe  
President & Chief Operating Officer

Attest: /s/ Jacqueline M. Matthews  
Jacqueline M. Matthews

**VERIFICATION**

The undersigned, being duly sworn, deposes and says that he has duly executed the attached Application dated April 30, 2012, for and on behalf of Harris & Harris Group, Inc.; that he is the President and Chief Operating Officer of Harris & Harris Group, Inc.; and that all actions by shareholders, trustees, and other bodies necessary to authorize deponent to execute and file this Application have been taken. Deponent further says that he is familiar with such instrument, and the contents thereof, and the facts set forth are true to the best of his knowledge, information, and belief.

/s/ Daniel B. Wolfe  
Daniel B. Wolfe

Sworn and subscribed to before me, a notary public, this 30th day of April, 2012.

/s/ Jacqueline M. Matthews  
Notary Public, State of New York  
No. 01MA6004743  
Qualified in New York County  
Commission Expires March 30, 2014

**EXHIBIT LIST**

- A Resolution adopted by the board of directors of Harris & Harris Group, Inc.

**HARRIS & HARRIS GROUP, INC.**

Resolutions by the Board

March 8, 2012

**RESOLVED**, that the officers of the Company shall be, and each of them hereby is, authorized and directed, by and on behalf of the Company, and in its name, to execute and cause to be filed with the Commission any applications, or amendments thereto, for exemptive relief or certifications, or requests for no-action or interpretive positions under the Securities Act of 1933, the Securities Exchange Act of 1934, the Investment Company Act of 1940, or any other applicable federal or state securities law, or applicable provisions of the Internal Revenue Code of 1986, as amended, as such officers, in their sole discretion, deem necessary or to effect such actions or pursue such activities or transactions of the Company as are duly authorized; and further

**RESOLVED**, that all prior actions taken by the officers of the Company in connection with the filing of such application with the Commission is hereby approved and ratified in all respects.