

Edgar Filing: SONEX RESEARCH INC - Form 8-K

SONEX RESEARCH INC  
Form 8-K  
April 17, 2003

SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT  
Pursuant to Section 13 or 15(d) of the Securities  
Exchange Act of 1934

Date of Report (Date of earliest event reported): April 17, 2003

SONEX RESEARCH, INC.  
(Exact name of registrant as specified in Charter)

Maryland	0-14465	52-1188993
(State or other jurisdiction of incorporation)	(Commision file number)	(IRS employer identification no.)

23 Hudson Street, Annapolis, MD 21401  
(Address of principal executive offices)

(410) 266-5556  
(Registrant's telephone number, including area code)

N/A  
(Former name or former address, if changed since last report)

ITEM 5. - OTHER EVENTS

## Edgar Filing: SONEX RESEARCH INC - Form 8-K

On April 17, 2003, Sonex Research, Inc. (the "Company") posted the following news announcement on its website ([www.sonexresearch.com](http://www.sonexresearch.com)):

### SONEX RECEIVES AUTOMOTIVE DIESEL ENGINE FOR TESTING UNDER DEPARTMENT OF ENERGY SUBCONTRACT

ANNAPOLIS, MARYLAND, April 17, 2003 - SONEX RESEARCH, INC. (OTC BB: SONX) announced today that it has taken delivery of an advanced research automotive diesel engine for testing under a subcontract from Compact Membrane Systems, Inc. (CMS), of Wilmington, Delaware, the prime contractor for a U.S. Department of Energy (DOE), Small Business Innovation Research (SBIR) Program, Phase II award. Sonex is evaluating the emissions reduction capability of its patented piston-based, Sonex Combustion System (SCS) technology in combination with a polymer membrane technology being developed by CMS.

In December 2002 Sonex announced the receipt of a \$458,862 subcontract, of which \$100,000 is cost-shared (funded) by Sonex, under DOE's SBIR Phase II prime contract award to CMS, but reported at that time that arrangements to secure the designated engine for the testing had not been completed. Sonex today disclosed the recent delivery to Sonex of the test engine, a state-of-the-art, three-cylinder, direct injected (DI), turbo-charged, automotive diesel engine developed by a major international vehicle manufacturer in the joint U.S. government and automotive industry funded PNGV (Partnership for a New Generation Vehicle) program. Accountability for the engine has been transferred to the CMS Phase II contract, but it remains the property of DOE.

According to the December 2002 announcement by Sonex, CMS has developed a polymer membrane technology for the addition of nitrogen enriched air (NEA) to the diesel engine combustion process as a means to reduce significantly the in-cylinder production of oxides of nitrogen (NOx) emissions as an alternative to the use of exhaust gas recirculation (EGR). If successful, the CMS method could provide the benefits of EGR with reduced risk to engine wear, without the burden of additional hardware and without significant impact on the turbo-charger. In the past, however, the introduction of high levels of EGR to reduce NOx emissions has been shown to substantially increase the production of soot/particulate emissions

The SCS piston-based technology for in-cylinder control of ignition and combustion has produced significant reductions of diesel engine soot/particulates while keeping NOx emissions low. One of the world's leading engine engineering and powertrain consulting firms, Ricardo Consulting Engineers Ltd of the U.K., completed a study in which they reported that in a laboratory test, a six cylinder DI diesel engine used in medium-duty trucks, operating with the SCS piston at the best injection timings, emitted up to 45% less soot than the stock engine, with equivalent fuel consumption.

The SBIR Phase I feasibility study performed by the two companies on the Sonex laboratory, single-cylinder, normally aspirated, DI diesel engine, showed that the NEA polymer membrane and the SCS piston in the single-cylinder engine, supercharged by Sonex, have the potential for significant reduction of NOx without increasing soot/particulate emissions. These results led to the award by DOE to CMS of the Phase II contract to transfer the single-cylinder results to the PNGV advanced research, three-cylinder automotive diesel engine.

Early stages of the Phase II project will focus on the emissions reduction capabilities of the SCS pistons separately, while subsequent testing in combination with the NEA membrane will demonstrate the viability for commercialization of the synergy of SCS configurations and the CMS membranes. This program would provide SCS in-cylinder emissions reduction data on a multi-cylinder diesel engine as a means for diesel engine manufacturers to evaluate the potential for SCS designs, alone and in combination with the NEA membrane, to reduce the cost and complexity of future exhaust aftertreatment

## Edgar Filing: SONEX RESEARCH INC - Form 8-K

systems.

### ABOUT CMS

Compact Membrane Systems, Inc. (CMS) is a high technology membrane company providing a family of high productivity, fluorinated polymeric membranes for gas separation and the associated production of nitrogen and oxygen enriched air. CMS hollow fiber membrane modules, sized to process engine intake air, are small enough to fit in mobile engine compartments. Their chemical nature allows them to maintain performance over extended periods of time while located in the harsh engine environment. CMS working in conjunction with major industrial gas companies is positioned to customize prototype membrane systems for engine use and subsequently supply commercial modules. More information about CMS can be found on the Internet at [www.compactmembrane.com](http://www.compactmembrane.com).

Contact: Compact Membrane Systems, Inc., Stuart Nemser, 302-999-7996, email: [snemser@compactmembrane.com](mailto:snemser@compactmembrane.com).

### ABOUT SONEX

Sonex Research, Inc., a leader in the field of combustion technology, is developing its patented Sonex Combustion System (SCS) piston-based technology for in-cylinder control of ignition and combustion, designed to increase fuel mileage and reduce emissions of internal combustion engines. Sonex plans to complete development, commercialize and market its SCS Stratified Charge Radical Ignition (SCRI) combustion process to the automotive industry in response to forthcoming increases in national vehicle fuel mileage standards. Presently, high mileage, roomy and safe five-passenger automobiles using gasoline, direct injected (GDI) engines are sold only in Japan and Europe due to high emissions. Sonex intends to conclusively demonstrate that SCS-SCRI will enable GDI engine vehicles to achieve 50 mpg (highway) while meeting emissions standards to permit sale in the U.S. as a viable, near-term alternative to longer-term solutions such as improvements in hybrid propulsion systems or years of further R&D required for fuel cell technology to become practical.

Additionally, independent third-party testing has confirmed the potential of the SCS application for DI diesel engines to reduce harmful soot in-cylinder without increasing fuel consumption. Sonex is pursuing joint marketing and commercialization programs for the SCS low soot technology with committed industrial partners.

Other SCS designs are being used to convert gasoline engines of various sizes to operate on safer, diesel-type "heavy fuels" for use in military and commercial applications requiring light weight and safe handling and storage of fuel. Examples include UAVs (unmanned aerial vehicles) and ATVs (all-terrain vehicles) such as those used by U.S. defense forces in Afghanistan, as well as outboard engines, small watercraft used as targets, and generator sets.

### CAUTION REGARDING FORWARD-LOOKING STATEMENTS

"Forward-looking" statements contained in this announcement, as well as all publicly disseminated material about the Company, are made pursuant to the "safe harbor" provisions of the Private Securities Litigation Act. Such statements are based on current expectations, estimates, projections and assumptions by management with respect to matters such as commercial acceptance of the SCS technology, the impact of competition, and the Company's financial condition or results of operations. Readers are cautioned that such statements are not guarantees of future performance and involve risks and uncertainties that could cause actual results to differ materially from those expressed in any such

## Edgar Filing: SONEX RESEARCH INC - Form 8-K

forward-looking statements. Additional information regarding the risks faced by Sonex is provided in the Company's periodic filings with the Securities and Exchange Commission under the heading "Risk Factors". Such filings are available upon request from the Company or online in the EDGAR database at [www.sec.gov](http://www.sec.gov).

###

### SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

April 17, 2003

SONEX RESEARCH, INC.  
Registrant

/s/ George E. Ponticas

-----  
George E. Ponticas  
Chief Financial Officer