Confidential & Proprietary
LASERLITH CORPORATION
4200 James Ray Drive, Suite 102, Grand Forks, ND 58202
701-610-8912 (ph) 701-777-2339 (fax)

October 29, 2008

Ms. Karlene Fine – Executive Director
North Dakota Industrial Commission
600 E. Boulevard Avenue, Department 405
Bismarck, ND 58505

Subject: Grant Application for the Improved Directional Drilling Technology for the Bakken Formation.

Dear Ms. Fine:

Enclosed is a grant application requesting the North Dakota Industrial Commission to approve funding from the Oil and Gas Research Council to participate in a study to improve directional drilling technology. Improvement in the current drilling technology will lend itself to efficiencies in successfully developing the Bakken Formation.

A $100 check is enclosed to cover the application fee.

The project intent is to increase the efficiencies of horizontal drilling through a redesign of horizontal drilling tools by including the use of miniature gyroscopes in the drilling assemblage. In principle, miniature MEMS gyroscopes enable the directional sensor to be positioned next to the drill bit. The benefit is reduction of backtracking and more accurate navigation, and time-savings.

We would appreciate confidentiality for sections 4, 5, 6.1, 6.2, and 6.3, as well as Appendices 1 and 4 since it discusses our strategic direction and we would prefer our competitors do not know this. However, if this is a problem please let us know.

Please contact me if you have any questions or need additional information for the enclosed grant application.

Sincerely,

Cassindy Chao

Title Page

Improved Directional Drilling Technology for the Bakken Formation

Laserlith Corporation (Lead)

Ideal Aerosmith

University of North Dakota

Purdue University

Administrative POC:	**Cassindy Chao**
	cassindy@laserlith.com
	phone: (701) 610-8912
Technical POC:	**Wallace Tang**
Principal Investigator	**wallacet@laserlith.com**
	phone: (701) 610-8912
Application Date:	**October 29, 2008**

Requested Amount: $500,000 for Phase 1

Table of Contents

6. Project Plan, Time Table and Standards of Success

We plan to demonstrate the high-temperature MEMS gyroscope within two years. The work is divided into two phases, each to be performed in one year. Laserlith Corporation, the lead organization, will manage the overall program. Quarterly progress reports will be submitted.

6.4 Economic Impact

Economic impact during the project includes hiring of 5 engineers/technicians in Grand Forks. Collaboration with the University of North Dakota will result in additional education benefits.

Economic impact after the project is successfully completed is substantial:

1. Laserlith and Ideal Aerosmith will produce the entire sensor module in Grand Forks, including the MEMS gyroscope chip. This will translate into the creation of 20-30 jobs.
2. Improved oil drilling technology can increase the amount of oil that can be extracted economically. A 1% increase in what can be extracted from the Bakken Formation may result in billions of dollars of taxable revenues.
3. With the recent dramatic volatility in the price of oil, reduced drilling cost is even more important to North Dakota's economy. As discussed, support businesses such as hotels, restaurants, home building and infrastructure will benefit from the resulting multiplier effects.

6.5 Environmental Impact

No environmental impacts are anticipated during the project. If deployed, improved guidance technology will help prevent accidents and environmental mishaps.

7. Background and Qualifications

The team has demonstrated the ability to efficiently design, prototype and optimize a number of MEMS devices including MEMS gyroscopes and other state-of-the-art MEMS sensors. The proposed project is based on the use of our MEMS-electronics integration process that enables interconnection of

MEMS and integrated circuits with minimal parasitic capacitance – critical for MEMS gyroscopes. Combined with the use of a proven MEMS gyroscope design developed for the Department of Defense, we believe that this project can be successfully completed in the proposed 2 year timeframe. Appendix 4 shows some of the prior accomplishments by the team.

Laserlith Corporation, the lead firm, will be responsible for overall project oversight and MEMS manufacturing. Ideal Aerosmith will lead marketing and module production. University of North Dakota will assist in micromechanical sensor development and module integration. Purdue University will lead in electronic circuit design. Quarterly progress reports will be submitted. Letters of support from the U.S. Army Research Laboratory and U.S. Army Armament Research, Development and Engineering Center are attached in Appendices 2 and 3.

This project is guided by input from the end-users, including Schlumberger, Baker-Hughes and Halliburton.

The Laserlith-Ideal Aerosmith-University of North Dakota-Purdue team has the design and manufacturing experience to develop and demonstrate the high-temperature MEMS gyroscope in a 2-year time-frame.

Beyond technical capabilities, the team has also excellent industry knowledge and already includes a proven vendor of Schlumberger, Halliburton and Baker Hughes. Ideal Aerosmith has delivered millions of dollars of test equipment over the last 15 years to Baker-Hughes, Halliburton, and Schlumberger. This equipment is installed at production facilities, field offices, and support centers around the world.

8. Management and Facilities

8.1 Personnel

Management members have extensive experience in the semiconductor manufacturing, advanced sensors, and oil drilling equipment. Key personnel include:

Cassindy Chao, Laserlith President, has spent the last 9 years establishing and reorganizing companies in the technology, consumer products, and recycling sectors. She ran the US operations for an

overseas consumer products manufacturer raising domestic sales to $200 million/annum. Earlier, she was an Executive Director at Goldman Sachs in Hong Kong, responsible for research coverage of media, satellite, and internet companies. She received her B.A. from Wellesley College in 1990.

Wallace Tang, Technical POC, has over 18 years of technology management experience. He managed the development of a number of semiconductor manufacturing technologies, and leveraged technical advances into market entry in Asia. He has negotiated and managed technology-licensing arrangements with Bell Labs, Applied Materials and UC Berkeley. He received his B.A. from Harvard in 1988.

Jeff Wise, Director of Manufacturing, has over 30 years of experience in the IC business. Specific experience includes manager of a 10,000 wafers/week Intel microprocessor manufacturing plant, developed first LED's and phototransistors at Fairchild, ran multichip module factory, and ran startup of "UltraSparc" products at Sun Microsystems. He holds M.S. degrees from the California Institute of Technology.

Jim Richtsmeier, Sr. VP- Business Growth & Technology for Ideal Aerosmith has more than 18 years experience in technology and test solutions. Much of Jim's experience is in test development for inertial based sensors such as gyroscopes and magnetometers. Jim has led many of Ideal's product development efforts while continuing to look for new markets for its technology. Jim holds a BS degree from the University of North Dakota.

Dr. Richard Schultz, Chairman of Electrical Engineering and Associate Processor at the University of North Dakota, is involved in the development of sensors, signal processing, and embedded systems. Dr. Schultz helps supervise the design of UAS payloads and sensor packages and guides the development of sense & avoid technologies. Dr. Schultz received his Ph.D. from the University of Notre Dame in 1995.

William Semke, Associate Professor in Mechanical Engineering at the University of North Dakota, is involved in developing precision motion control, smart structures and aerospace payloads. He received his PhD from University of Wisconsin Madison.

Dr. Dimitrios Peroulis, Assistant Professor of Electrical and Computer Engineering at Purdue University, is involved in MEMS research for over 10 years and has developed a number of MEMS devices including switches, varactors, filters, match networks, amplifiers and antennas. He has been a reviewer of several journals including IEEE Transactions on Microwave Theory & Techniques, IEEE Micro-wave and Wireless Components Letters. Dr. Peroulis received his PhD from University of Michigan.

8.2 Facilities/Equipment

The proposed project leverages ongoing development contracts from the Department of Defense that are supporting the establishment of a state-of-the-art MEMS foundry in Grand Forks, North Dakota. This project was funded for $2.4 million in the FY08 defense budget and also $2.4 million in the FY09 defense budget.

Design tools include L-edit and ANSYS multiphysics finite element simulation software.

Equipment relevant to the project includes proprietary bonding equipment and pre-bond cleaning tools that enables the MEMS-electronics integration process. Other equipment includes sputtering systems and electroplating systems.

Ideal Aerosmith has an impressive array of inertial test equipment that will be used extensively in the development and integration process. This will enable the system to be evaluated at both the component and system level.

Ideal Aerosmith and Laserlith both have facilities located in the COELSAT REAC building convenient located next to the UND campus. This will allow UND, Laserlith, and Ideal Aerosmith a convenient site to collaborate on the project.

Our facilities meet all applicable environmental laws and regulations of federal, state, and local Governments for, but not limited to emissions, effluents, solid and bulk waste disposal practices, and handling and storage of toxic and hazardous materials.

9. Timetable

9.1 Time Table and Evaluation Points

Figure 5 shows the time table. As discussed, quarterly reports will be submitted. Key milestones/evaluation points for Year 1 are the MEMS gyroscope mechanical sensor and the high temperature circuit design. Key milestones/Evaluation Points for Year 2 are the high temperature circuit, the complete MEMS gyroscope, and integrated sensor module.

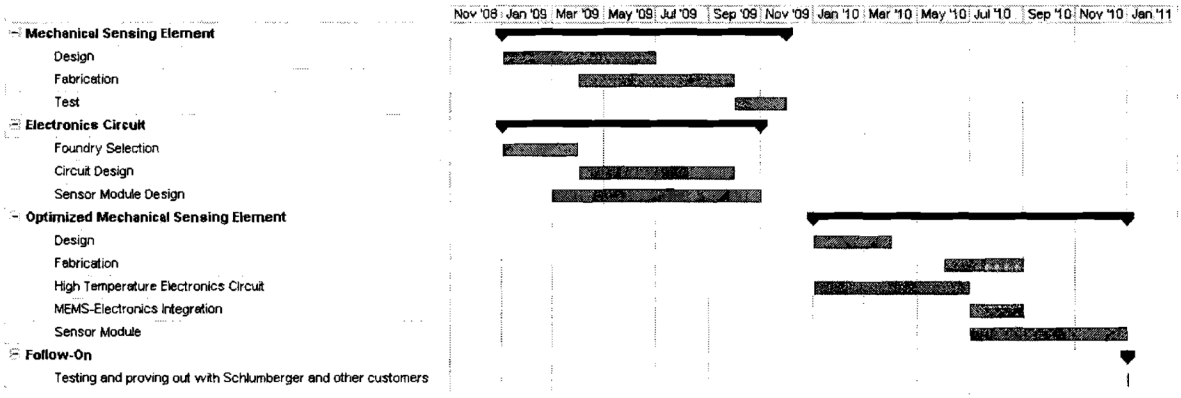

Figure 5. 2-year Project time table.

10. Budget

The budget for the first year/Phase 1 is $1,207,000. Requested funding from the Oil and Gas Research Council is $500,000. Matching funds of $357,000 are from Laserlith Corporation's indirect cost. MicroAssembly will customize a $250,000 fab run. Ideal Aerosmith will also have $100,000 in indirect cost contribution.

The budget for the second year/Phase 2 is $1,785,500. Requested funding from the Oil and Gas Research Council is $700,000. Matching funds of $535,500 are from Laserlith Corporation's indirect cost. Matching funding for the MicroAssembly fab run is again $250,000. As in Year/Phase I, additional matching funding includes Ideal Aerosmith indirect cost contribution of $300,000.

Beyond these matching funds, the project also leverages ongoing MEMS development contracts from the Department of Defense that are funding the establishment of a state-of-the-art MEMS foundry in

Grand Forks, North Dakota. For this project, $2.4 million was budgeted in the FY08 defense budget for this project, and $2.4 million was also budgeted in the FY09 defense budget. Additional funding will be requested for FY2010. If funding is reduced, there is the possibility of maintaining the project, albeit at a slower pace.

Funding Sources

	Phase I		Phase II	
Oil and Gas Fund	500,000	41%	700,000	39%
Laserlith Matching	357,000	30%	535,500	30%
MicroAssembly Fab Run	250,000	21%	250,000	14%
Ideal Aerosmith	100,000	8%	300,000	17%
	1,207,000		1,785,500	

Project Breakdown

	Phase I	Phase II
Salaries	300,000	450,000
Technical Subcontracts	100,000	100,000
Fab Run	250,000	250,000
Materials/Equipment	200,000	200,000
Other Indirect Costs	357,000	785,500
Total	1,207,000	1,785,500

11. Tax Liability: Affidavit

I, Cassindy Chao, certify that Laserlith Corporation does not have any outstanding tax liability owed to the State of North Dakota or any of its political subdivisions.

Name: Cassindy Chao

Title: President

Laserlith Corporation

Date: October 28, 2008

12. Confidential Information

Confidential information includes technology and the relationship with Schlumberger. Sections 4, 5, 6.1, 6.2, and 6.3, as well as Appendices 1 and 4 contain confidential information. We would appreciate having this information be confidential as it discusses our business strategy and direction.

13. Patents and Rights to Technical Data

The team wishes to reserve all patents and rights relating to the MEMS gyroscope design, fabrication process, packaging process, and circuit design.

14. Appendices

Our appendices are as follows:

14.1- Letter of Interest from Schlumberger - CONFIDENTIAL

14.2- Letter of Interest from the Army Research Laboratory

14.3- Letter of Interest from Army Armament Research Development and Engineering Center

14.4- MEMS Gyroscope Design - CONFIDENTIAL

Appendix 14.2: Letter of Interest from the Army Research Laboratory

DEPARTMENT OF THE ARMY
US ARMY RESEARCH, DEVELOPMENT AND ENGINEERING COMMAND
ARMY RESEARCH LABORATORY
2800 POWDER MILL ROAD
ADELPHI MD 20783-1197

October 1, 2008

To:
Ms. Cassindy Chao-Bierhaus
Laserlith Corporation
University of North Dakota Center for Innovation
4200 James Ray Drive
Grand Forks, North Dakota 58203
From:
Dr. Madan Dubey
Research Physical Scientist
US Army Research Laboratory
Sensors and Electron Devices Directorate
AMSRD-ARL-SE-RL
2800 Powder Mill Road
Adelphi, MD 20783
V: 301-394-1186
F: 301-394-4562
E:mdubey@arl.army.mil
SIPR:mdubey@arl.army.smil.mil

Dear Cassindy
The Laserlith team possesses unique capabilities to deliver a MEMS-based gyroscope sensor. Your MEMS-IC integration technology enables integration of MEMS and IC process with minimal signal losses. The Army Research Laboratory is interested in evaluating your sensor technologies for UAV, missile and munition applications.
The Laserlith team has also met many milestones in MEMS technologies including demonstrating MEMS switches that operate beyond 300 billion switching cycles, accelerometers that operate under more than 100,000g conditions, and MEMS mirrors that operate under high energy laser illumination for missile defense applications.
Kind Regards,

Madan Dubey

Dr. Madan Dubey

Appendix 14.3: Letter of Interest from Army Armament Research Development and Engineering Center

DEPARTMENT OF THE ARMY
UNITED STATES ARMY
ARMAMENT RESEARCH DEVELOPMENT AND ENGINEERING CENTER
PICATINNY ARSENAL, NEW JERSEY 07806-5000

October 14, 2008

Ms Cassindy Chao
Laserlith Corporation
4200 James Ray Drive Suite 201-A
Grand Forks, North Dakota 58203

Dear Cassindy:

I am writing to express ARDEC's continued interest and strong support in Laserlith's MEMS gyroscope technologies. ARDEC is an ardent supporter of entrepreneurial small businesses and we are pleased with your track record in developing state-of-the-art MEMS sensors and safe & arm devices over the last 5 years.

Beyond the oil drilling application, low-cost advanced MEMS gyros are critical for providing inertial guidance in smart munitions. Your technology can reduce the cost and improve the accuracy of many of our smart munitions. The improved accuracy and low drift rates possible with your technology also offers important advantages for guiding UAV and UGV systems.

In particular, we are impressed with your MEMS-CMOS integration technology, which can improve the signal-to-noise ratio of capacitive sensors by up to 99%. Furthermore, your batch hermetic sealing capability will be critical for reducing the cost of gyro sensors by eliminating the need for expensive one-at-a-time vacuum packaging.

Respectfully,

Mark J. Mezger
Business Development Manager
US Army Armaments RDEC