

LEHIGH UNIVERSITY
Center for Advanced Materials and Nanotechnology (CAMN)
LIMITED COLLABORATION AGREEMENT

Company (hereinafter referred to as "Sponsor"):

Address: _____

Designated Representative: _____ Title: _____

Telephone: _____ Fax: _____ E-Mail: _____

CAMN Contacts: Gene Lucadamo, Industrial Liaison Officer, 610-758-4855, eal7@lehigh.edu
Katrina Kraft, Administrative Manager, 610-758-3863, kmk207@lehigh.edu

Objectives of the Center for Advanced Materials and Nanotechnology (CAMN):

Lehigh University ("the University") is a non-profit, tax-exempt institution. The CAMN furthers the University's mission of education, research, and the advancement and dissemination of knowledge. The objectives of the CAMN are to identify, promote and engage in strategic areas of research and education in advanced materials and nanotechnology that meet the needs of industry, government and students through interdisciplinary collaborations, productive partnerships, dedicated expertise, accessible leading-edge facilities, and innovative educational programs.

Interactions with Pennsylvania companies that meet the objectives of the PA Materials Research Science and Engineering Center (MRSEC) program, as agreed upon by the PA Ben Franklin Technology Development Authority, will be used as match for the PA MRSEC award.

1. **Research and Testing Plan:** The research and testing to be conducted under this Agreement consists of the tasks, schedule, and deliverables described in Appendix A. University research facilities and equipment are non-profit, tax-exempt resources and are therefore not available for direct use or rental by Sponsor, Industrial Liaison Members or others for commercial purposes. University shall retain title to all equipment, materials, and supplies purchased and/or fabricated by it under this Agreement.

2. **Terms and Fees:** The term of this Agreement is six (6) months, beginning _____ and ending _____. A non-refundable access fee of \$500 is required, payable by check to "Lehigh University" sent to: Center for Advanced Materials and Nanotechnology, Lehigh University, 5 E. Packer Avenue, Bethlehem, PA 18015, Attention: Katrina Kraft. The access fee must accompany submission of this signed Agreement. An invoice can be provided upon request. Sponsor will be invoiced monthly for activities associated with this Agreement, including actual costs incurred, plus a 41.28% administrative fee. Appendix B lists the rates for labor and CAMN equipment use. Any sums due and owing by Sponsor to University shall bear interest at the rate of 18% per annum from the date due until paid. Sponsor shall be liable for any and all costs and expenses incurred by University in enforcing this Agreement.

3. **Intellectual Property:** University shall retain all rights and title to all inventions, improvements and/or discoveries which, in performance of the research and testing, are conceived and/or made by faculty, staff or students of University, whether patentable, copyrightable or not. Sponsor shall retain all rights and title to all inventions, improvements and/or discoveries which, in performance of the research and testing, are conceived and/or made solely by Sponsor, whether patentable, copyrightable or not. Joint inventions

improvements and/or discoveries which, in performance of the research and testing, are conceived and/or made jointly by University and Sponsor, whether patentable, copyrightable or not, will be jointly owned.

4. **Disclaimer of Warranties; Indemnification:**

- A. ANY AND ALL RESULTS OF THE RESEARCH AND TESTING, DELIVERABLES, COLLABORATION, INTELLECTUAL PROPERTY, OR OTHER MATERIALS PROVIDED BY UNIVERSITY UNDER THIS AGREEMENT ARE PROVIDED ON AN "AS IS" BASIS. UNIVERSITY MAKES NO WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, AS TO ANY MATTER WHATSOEVER, INCLUDING, WITHOUT LIMITATION, WARRANTIES WITH RESPECT TO THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PROJECT OR ANY DELIVERABLES. UNIVERSITY MAKES NO WARRANTY OF ANY KIND WITH RESPECT TO FREEDOM FROM PATENT, TRADEMARK, COPYRIGHT OR TRADE SECRET INFRINGEMENT ARISING FROM THE USE OF THE RESULTS OF THE RESEARCH AND TESTING, DELIVERABLES, COLLABORATION, INTELLECTUAL PROPERTY OR OTHER MATERIALS PROVIDED HEREUNDER. UNIVERSITY SHALL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE, OR OTHER DAMAGES SUFFERED BY SPONSOR OR ANY OTHER PERSON RESULTING FROM THE USE OF ANY RESEARCH AND TESTING, DELIVERABLES OR OTHER MATERIALS. SPONSOR AGREES THAT IT SHALL NOT MAKE ANY WARRANTY ON BEHALF OF UNIVERSITY, EXPRESS OR IMPLIED, TO ANY PERSON CONTAINING THE APPLICATION OF THE RESULTS OR ANY DELIVERABLES OF THE RESEARCH AND TESTING CONDUCTED UNDER THIS AGREEMENT.
- B. Except and only to the extent that such claims or liabilities are proved to result from the sole negligence of the University, Sponsor agrees to defend, indemnify and hold harmless the CAMN, the University, its trustees, officers, faculty, students, employees, and agents from and against all claims, causes of action, damages, injuries (including bodily injury and death), losses, liabilities, and expenses (including attorney's fees) that may be sustained or claimed to be sustained by Sponsor or any of its employees or agents as a result of activities related to this Agreement, presence at or use of University or CAMN facilities, use of the results or any reports or other materials, any breach of this Agreement, or any act or omission of Sponsor, its employees, subsidiaries, affiliates, contractors, licensees or agents.

5. **Insurance:** Sponsor shall carry the following insurance coverage with companies licensed to do insurance business in the Commonwealth of Pennsylvania and acceptable to University:

- **Commercial General Liability**, including Contractual Liability and Completed Operations/Products Liability coverage, at the minimum limit of \$1,000,000 per project/ per occurrence (depending on degree of risk, other limits may be appropriate) and \$2,000,000 aggregate;
- **Automobile Liability** at \$1,000,000 each accident.
- **Workers' Compensation** at statutory limits and Employer's Liability coverage at a minimum limit of \$1,000,000;
- **Professional Liability** – Whenever work under this Agreement involves professional services excluded from the SPONSOR'S Commercial General Liability Insurance and/or it is standard practice in SPONSOR'S profession to do so (e.g., Architectural, Engineering, Medical, Internet/Information Technology, etc.), SPONSOR shall carry Professional Liability Insurance and/or Technology Errors and Omissions Insurance to protect the University from any liability arising out of the professional obligations performed pursuant to the requirement of the Agreement. SPONSOR shall evidence Professional Liability Insurance and/or Technology Errors and Omissions Insurance with a limit of not less than \$1,000,000 per occurrence and \$3,000,000 aggregate (retroactive date prior to work; extended reporting period of 36 months).
- **Pollution Liability** – The University may require this coverage whenever work under this

Agreement involves pollution risk to the environment. This coverage is to include sudden and gradual coverage for third-party liability including defense costs and completed operations.

All policies of insurance described above shall be on a primary basis non-contributory with any other insurance coverages and/or self-insurance carried by the University.

If the nature and/or scope of the Project justify it, University may require Sponsor to provide evidence of higher coverage limits. The procuring of insurance required under this Article shall not relieve Sponsor of any obligation or liability assumed under this Agreement nor of any obligation or liability imposed by operation of law.

Prior to the University's commencement of the Project pursuant to this Agreement, Sponsor shall furnish University with proof of insurance, satisfactory to University in its sole discretion, evidenced by duly authenticated certificates of insurance, delivered to University, which certificates shall show the insurance type, amount, class of operations covered, effective dates, and dates of expiration of policies. **Such certificates shall evidence that Lehigh University has been named as an Additional Insured and Certificate Holder as Lehigh University CAMN, Whitaker Laboratory, 5 E. Packer Ave., Bethlehem, PA 18015** on all such policies except Workers' Compensation and Professional Liability and shall also contain the following statement or its substantial equivalent:

"The insurance covered by this certificate will not be canceled or materially altered, except after thirty (30) days written notice has been received by Lehigh University."

6. **Compliance with Laws and University Policies:** All research and testing and other activities occurring under this Agreement shall be conducted in such a manner that they comply with all applicable federal, state, and municipal laws and regulations, including but not limited to those applicable to the University as a non-profit, tax-exempt educational institution and as a recipient of federal and Commonwealth of Pennsylvania funding and grants. All research and testing and other activities occurring under this Agreement are also subject to compliance with University policies and procedures, and must be consistent with the University's educational and research missions. Sponsor shall ensure that all of its activities and the activities of its employees and agents are in strict compliance with all applicable federal, state, and municipal laws and regulations, including but not limited to the Occupational Safety and Health Act of 1970 ("OSHA") and all University policies and procedures.

7. **Safety and Training:** While CAMN will inform Sponsor regarding general safety policy prior to being allowed to use University facilities; Sponsor assumes primary responsibility for the personal safety of its employees and agents. Sponsor must operate all equipment in a safe and professional manner, consistent with the operating instructions and laboratory rules. Sponsor represents that its employees and agents are qualified and possess the necessary knowledge and skill to safely use the University's facilities and operate its equipment. University shall have the right to prohibit use by any employee or agent of Sponsor if University, in its sole discretion, believes that Sponsor has breached this representation with regard to any particular employee or agent. If deemed necessary by CAMN, or requested by Sponsor, training on laboratory equipment can be provided by University at rates shown in Appendix B.

8. **Publicity:** Sponsor shall not use the name of University, the Project Manager, or any member of University's Project staff, in any publicity, advertising or news release without the prior written approval of the University's Director of the Office of Research and Sponsored Programs and the Vice President for University Relations or their authorized designees.

9. **Termination:** The Agreement may be terminated at any time by either Sponsor or the University upon fifteen (15) days prior written notice to the other party. Sponsor shall pay all costs and non-cancellable commitments incurred by University through the termination date. Termination of this Agreement by either

party for any reason shall not affect the rights and obligations of the parties accrued prior to the termination effective date.

10. **Governing Law:** This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania, without regard to the conflicts of laws doctrine of such state.

11. **Entire Agreement:** This Agreement constitutes and expresses the entire agreement of the parties hereto with reference to the subject matter hereof, with all prior promises, undertakings, representations, agreements, understandings and arrangements relative thereto having been herein merged into this Agreement. Any agreement to change the terms of this Agreement in any way shall be valid only if the change is made in writing and signed by a duly authorized representative of each party hereto.

The parties, intending to be legally bound, have executed this Agreement by their duly authorized representatives on the date indicated below.

Agreed:

COMPANY _____

Signature: _____

Name and Title: _____

Date: _____

LEHIGH UNIVERSITY CENTER FOR ADVANCED MATERIALS AND NANOTECHNOLOGY

Signature: _____

Name and Title: Martin P. Harmer, Director, CAMN, Lehigh University

Date: _____

**APPENDIX A
To CAMN Limited Collaboration Agreement***

1. Research / Testing Tasks:

2. Deliverables:

3. Schedule / Due Date:

4. Cost Information (if applicable):

5. Does the project involve the use of:

- Radioactive material? No Yes
- Radiation producing equipment? No Yes
- Potentially infectious agents, incl. human blood/tissue? No Yes
- Human Carcinogens? No Yes
- In Vitro Formation of Recombinant DNA? No Yes
- Hazardous Materials/Gases? No Yes

**Please note that this Appendix must be completed to execute the Limited Collaboration Agreement.*

APPENDIX B
To CAMN Limited Collaboration Agreement

CAMN Industrial Liaison Program	
Labor and Equipment Rates – Partial List	
<i>An administrative fee of 41.28% will be added to these rates</i>	
<i>Rates Subject to Change</i>	
Description	External Rate
	<i>(per hour unless otherwise noted)</i>
LABOR RATES (plus employee benefits charges of 0%-32.7%):	
Students	25
Technicians	50-60
Research Scientists	50-75
Faculty	100
EQUIPMENT RATES:	
SEM	
Hitachi 4300 FEGSEM	400
JEOL 6400F CL SEM	350
FEI Strata DB 235 FIB	400
JEOL 733 EPMA Microprobe	350
FEI XL30 ESEM (Environmental)	400
FEI 535 SEM	375
TEM	
JEOL 2000FX TEM	350
Philips EM 420 TEM	300
JEOL 2200FS	500
STEM	
VG HB 603 Scanning TEM	600
GEMINI-LEO Electron Beam (Nanolithography) – <i>Sherman Fairchild Laboratory</i>	600
Specimen Prep	
Ion Micro Mill (PIPS)	5/sample
Evaporator	7/sample
Fischione Low Angle Milling and Polishing Machine	5/sample
Plasma Cleaner	1/sample
Atomic Force Microscopy (Nanoscope/Hysitron)	150
Atomic Force Microscopy (Asylum Research, MFP-3D Bio)	200
Profilometer	60 up to 10 hrs; 3 over 10 hours
Scienta ESCA 300 (equipment time only)	160

Description	External Rate
	<i>(per hour unless otherwise noted)</i>
Laser Raman System	312.50 (or 2500/day)
UV-Vis-NIR DRS Spectroscopy	312.50 (or 2500/day)
Solid State NMR	70 (or 700/day)
FTIR Spectrometer	175
Light Optical Microscopy supplies	35/sample
Leco Microhardness tester	60
Leco M400, Leco M100	60
Light Optical Metallographs (Olympus Vanox)	40
Quantitative Scope (Nikon Microphet w/Digitalizing pad)	30
Automatic Polishers	30/run
Clemex (Imaging)	100
Abrasive Cutting:	
Leco CM-20	6/cut
Buehler Isomet	4/cut
Struers Accuton-50	8/cut
Furnaces (rate listed for up to 48 hrs; then \$3/hr)	12
With gas (rate listed for up to 48 hrs; then \$5/hr)	14
Salt Bath (rate listed for up to 48 hrs; then \$3/hr)	12
X-Ray Facility	100
Sputtering System	300/run
TG/DTA Thermal Analysis (Dilatometer)	330/run
High Speed Saw (Struers)	50/cut
Wire Saw	12/cut
Particle Size Analyzer (LA 910)	100/sample
Resistance Furnace	4
Isopress	75/run
Hi Temp Furnace < 24 hrs	500/run (run =<24 hrs)
Hi Temp Furnace > 24 hrs	20
Vacuum Hot Press < 24 hrs	500/run (run=<24 hrs)
Vacuum Hot Press > 24 hrs	20
Diamond Saw	6
Rheovibron	20
Clean Room DI H2O system	50/gal
Clean Room	120

Description	External Rate
	<i>(per hour unless otherwise noted)</i>
Inst Cap Rheometer	50
Brabender Extruder	40
Rotary Viscometer	40
Tetrahedron Press	42
DSC/TGA	40
DMA/TMA/DEA	40
Rheometrics (without liquid nitrogen)	200/run
Rheometrics (with liquid nitrogen)	250/run
Flow Calorimetry	100/run
Environmental Chambers	210/week
C-SAM	75
UV Ozone Chamber	5
Contact Angle Goniometer	50
Gleeble Thermo-Mechanical Simulator	50/run
Met Mechanical Testing	60
- w/extensometer	80
Instron Fatigue w/computer	25
Instron Fatigue w/o computer	15
Izod Impact Tester	5/sample
Evaporator System	40
Thin Film Mech Test System	40/run
Static Laser Lightscattering Spectrometer	100
Dynamic Laser Lightscattering Spectrometer	100
Zeta Potential Analyzer	100