STATEMENT OF CONSIDERATIONS

REQUEST BY CAMBRIOS TECHNOLOGIES CORPORATION FOR AN ADVANCE WAIVER OF THE GOVERNMENT'S DOMESTIC AND FOREIGN PATENT RIGHTS UNDER DOE COOPERATIVE AGREEMENT DE-EE0003254; DOE WAIVER NO. W(A)2011-012; CH1593

The Petitioner, Cambrios Technologies Corporation (CAMBRIOS), has requested an Advance Waiver of the Government's domestic and foreign rights to inventions in the above cited research and development cooperative agreement issued by DOE's National Energy Technology Laboratory (NETL). See attached CAMBRIOS' Petition, Answer 1.

Subject of the R&D Contract

Title: Solution Processable Transparent Conductive Hole Injection Electrode for OLED SSL

The purpose of the project is to develop a solution processable transparent conducting hole injection (TCHI) electrode for OLED SSL (Organic Light Emitting Diode-Solid State Lighting) applications. The TCHI electrode will replace the combination of sputtered ITO electrode and hole injection layer. The TCHI electrode will consist of a random connected network of silver nanowires embedded in and planarized by a tailored hole injection layer. By using this construction, it is possible to decouple and optimize separately the transmission/conductivity of the electrode and its work function. See Petition Answer 2 for more details of this project and specific stages.

CAMBRIOS' Expertise in the Field

CAMBRIOS is dedicated to the commercialization of formulated metallic nanowire dispersions, ClearOhm™ coating, and coated transparent conductive films to replace conventional sputtered transparent conductive oxide in as many applications as possible. CAMBRIOS has established a unique state of the art facility for developing its research and production capabilities. The company is equipped to meet the current and anticipated growing needs of its customers through its wet, dry and reliability labs on site. CAMBRIOS believes that OLED technology represents a large potential market and a promising future growth area for the company's products. The company has entered into collaborative relationships with at least 12 companies across the globe for development of OLED devices. See Petition Answers 5 & 6.

The Allocation of Patent Rights

CAMBRIOS has requested the worldwide rights in all inventions developed under this cooperative agreement. The total budget for the two-year project is $2,013,980 with $490,933 provided by CAMBRIOS and an additional $323,076 from a sub-recipient. This exceeds the 20% minimum required cost share. See Petition Answer 3. In addition, CAMBRIOS has invested more than $40 million of private funds in the development of technology that will be used in the performance of this project. The company has spent over 4 years developing nanostructure fabrication techniques and transparent conductive materials using nanostructures.

A portion of its developed (and patent protected) technology is specifically for application in the OLED field. Therefore, any inventions from this project will add to CAMBRIOS current portfolio. See Petition Answer 7.

Granting the waiver will not limit competition among private developers of OLED SSL. CABRIOS is currently a small company that is relying for its success on providing nanostructure coating solutions and transparent conductive films to a wide range of customers as possible. It has non-exclusively licensed its technology when working with other companies to develop its product line. See Petition Answer 9 & 10.

Due to CABRIOS's established presence as a leader in this field, it is important for it to own, maintain and commercialize any inventions under this cooperative agreement. This will assist in advancing the US market and economy since CABRIOS is a US company with manufacturing facilities in the United States. The patent rights waiver is subject to the retained government-use license, march-in rights, reporting requirements, 35 U.S.C. 204, and following DOE's standard U.S. Competitiveness provision:

> U.S. Competitiveness
> The waiver recipient agrees that any products embodying any waived invention or produced through the use of any waived invention will be manufactured substantially in the United States, unless the waiver recipient can show to the satisfaction of DOE that it is not commercially feasible to do so. The waiver recipient further agrees to make the above condition binding on any assignee or licensee or any entity otherwise acquiring rights to any waived invention, including subsequent assignees or licensees.

SSL Core Program and Licensing

In addition, this project is under the Solid State Lighting Program (SSL) Core Program, and subject to a Determination of Exceptional Circumstances. The Solid State Lighting Program is to develop advanced solid state lighting technologies that, compared to conventional lighting technologies, are much more energy efficient, longer lasting, and cost-competitive, by targeting a product system efficiency of 50 percent with lighting that accurately reproduces sunlight spectrum. The SSL program has a multi-tier structure. One tier consists of a competitively selected SSL Partnership whose membership includes organizations that have or will have the capacity to manufacture SSL systems, i.e., the entire package from wall plug to illumination. Another tier is the Core Technology Program, which will focus on finding solutions to the more difficult shared technical barriers identified by the SSL partnership. It focuses on the R&D efforts of universities, national laboratories, and other research institutions. For the link between the SSL Partnership and the Core Technology Program to succeed, the SSL Partnership will

require a guaranteed right to license the technologies developed by Core Technology Program participants. The Core Technology Program participants perform work subject to the exceptional circumstance made for the SSL program: any patent waiver granted to a large business will contain language requiring the large business to offer to each member of the SSL Partnership the first option to enter into a non-exclusive license for subject inventions developed under the Core Program, upon terms that are reasonable under the circumstances, including royalties. In addition, any entity having the right to use or sell any subject invention in the United State and/or any other country, including the Core Technology Program participant, must agree that any products embodying the subject invention or produced through the use of the subject invention will be substantially manufacture in the United States.

Delay in Filing Petition

Finally, CAMBRIOS has adequately explained the delay in filing the petition with DOE. The wrong patent clause (small business) was included in the executed cooperative agreement. After CAMBRIOS discovered the error, it contacted DOE to have the cooperative agreement amended and filed a petition for title to Subject Inventions. See Petition Answer 16.

Conclusion

CAMBRIOS was selected as the most qualified U.S. company capable of performing the tasks under this project. The technology being developed is closely aligned with CAMBRIOS' business and extensive research in this field. Therefore, the Government believes that the inventions created under this cooperative agreement should be owned by CAMBRIOS for commercialization.

For the foregoing reasons, and in view of the objectives and considerations set forth in 10 CFR 784, all of which have been considered, it is recommended that the requested waiver be granted.

[redacted] Date: [redacted]

Gary Drew
Assistant Chief Counsel for Intellectual Property
DOE Chicago Office

Based on the foregoing Statement of Considerations, it is determined that the interests of the United States and the general public will best be served by waiver of the United States' domestic and foreign patent right as set forth herein, and therefore, the waiver is granted. This waiver shall not apply to a modification or extension of the cooperative agreement where, through such modification or extension, the purpose, scope or DOE cost of the cooperative agreement has been substantially altered. This waiver shall not affect any waiver previously granted.

CONCURRENCE:

[redacted] Date: [redacted]

Jim Broderick
Program Manager
Office of the Building Technologies Program

APPROVED:

[redacted] Date: [redacted]

John Lucas
Assistant General Counsel
for Technology Transfer and Intellectual Property