

EXHIBIT 1
GEORGIA TECH RESEARCH CORPORATION
PACKAGING RESEARCH CENTER
BYLAWS (“BYLAWS”)
Version 3.01.08

ARTICLE I
MISSION AND ORGANIZATION

- 1.1 **Mission.** The PACKAGING RESEARCH CENTER (hereinafter “CENTER” or “PRC”) has been established and administered by Georgia Tech Research Corporation (hereinafter “GTRC”) to provide and promote research, education and training in the Electronics Packaging Area and related subject areas. The CENTER plans to conduct research focused on the Research Area and invite interested organizations to become members (hereinafter “MEMBER” or “MEMBERS”) and participate in the research activities conducted therein.
- 1.2 **Organization.** The Director shall lead the CENTER with the assistance of the MEMBER through an Industry Advisory Board (“IAB”) that has the purpose of advising on the research directions and operational policies of the CENTER as further defined by Articles III and IV. Upon consideration of IAB recommendations, the final selection of research projects to be performed and the manner in which such projects shall be performed and CENTER shall be operated shall be made by the Director of the CENTER on behalf of GTRC.

ARTICLE II
DEFINITIONS

- 2.1 “MEMBER” means entities, either public or private, which support and/or fund RESEARCH PROJECT(S) as defined in the PRC MEMBERSHIP AGREEMENT.
- 2.2 “STAFF MEMBER” shall mean employees, independent contractors, subcontractors, consultants, student assistants and students of the Georgia Institute of Technology (hereinafter “GIT”), a unit of the University System of Georgia, who shall perform the RESEARCH PROJECT(S).
- 2.3 “RESEARCH PROJECT(S)” shall mean the research and development projects, tasks or program(s) which will be performed by GTRC, PRC and/or MEMBER. RESEARCH PROJECTS are set forth in the PRC MEMBERSHIP AGREEMENT.
- 2.4 “INDUSTRY ADVISORY BOARD” (hereinafter “IAB”) shall mean a committee consisting of the representatives of each of the MEMBER for the relevant membership category chosen by the MEMBER, and representatives of the GTRC.

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- 2.5 “PRC MEMBERSHIP AGREEMENT” means an agreement between the Georgia Tech Research Corporation, a Georgia nonprofit corporation having a business address at Research Administration Building, 505 Tenth Street, Atlanta, Georgia 30332-0420 (GTRC) and a MEMBER.
- 2.6 “INTELLECTUAL PROPERTY” means any intellectual property, including, without limitation, any inventions, improvements and discoveries, including all computer software, works, material and data, whether or not protectable by patent, trade secret or copyright which is made, created or conceived in the course of performance of the RESEARCH PROJECT(S) which are MEMBER-dues funded.
- 2.7 "BACKGROUND INTELLECTUAL PROPERTY" means any written and/or oral technical information, patent applications, patents, utility models and other statutory intellectual property rights with regard to the RESEARCH PROJECT(S) or other efforts owned by MEMBER and/or GTRC, but not resulting from performing the respective RESEARCH PROJECT(S), to the extent available to a MEMBER and/or GTRC.
- 2.8 "RESEARCH RESULTS" means any and all results, whether patentable or not, in written or oral form, achieved by performing the research and/or development work under the respective RESEARCH PROJECT(S) funded by MEMBER dues.
- 2.9 “SUBSIDIARY” shall mean any company in which MEMBER owns more than 50% (fifty per cent) of such company’s voting capital.
- 2.10 “MEMBER INTELLECTUAL PROPERTY” means individually and collectively all INTELLECTUAL PROPERTY which is made, created or conceived solely by employees or personnel of MEMBER in the course of performance of work under the CENTER membership.
- 2.11 “GTRC INTELLECTUAL PROPERTY” means individually and collectively all INTELLECTUAL PROPERTY and RESEACH RESULTS which is made, created or conceived jointly by STAFF MEMBER of GTRC in the course of performance of work in support of GTRC, GIT or the PRC RESEARCH PROJECT(S).
- 2.12 “JOINT INTELLECTUAL PROPERTY” means individually and collectively all INTELLECTUAL PROPERTY which is made, created or conceived jointly by STAFF MEMBER and employees or personnel of MEMBER in the course of performance of work in support of GTRC, GIT or the PRC RESEARCH PROJECT(S).

ARTICLE III MEMBERSHIP

- 3.1 **Eligibility and Admission of MEMBERS.** Eligibility for membership shall be determined by the Director of the CENTER. An organization may become MEMBER of the CENTER upon being nominated by the CENTER Director, Faculty, Staff or Member, and fulfillment of applicable membership obligations.

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- 3.1.1 Requests for membership by non-U.S. entities shall be reviewed by GTRC.
- 3.1.2 Notwithstanding anything to the contrary contained herein, all membership benefits are explicitly conditioned on full and timely compliance with all applicable U.S. Export Laws and Regulations.
- 3.1.3 All MEMBERS may, at their option, enter into separate agreements or contracts with GTRC for specific non-MEMBER funded research projects. The intellectual property from these separate agreements or contracts with GTRC shall be governed by the terms as set forth in the separate research agreements or contracts.
- 3.2 **Membership Requirements.** Membership in the CENTER is offered to companies at several levels, each with specific rights, privileges, cost structures and durations. These are identified and selected via the PRC MEMBERSHIP AGREEMENT.
- 3.2.1 Duration for MEMBERS will be for a period as defined in the selected level and/or program of membership as defined in the PRC MEMBERSHIP AGREEMENT.
- 3.2.2 Membership entry or renewal into the CENTER will be on either April 1 or October 1 of a given calendar year. MEMBER seeking to join or renew outside of the above date will realize an additional flat prorated expense for the additional months as applicable.
- 3.3 **Dues.** Dues shall be apportioned for the support of research and research-related programs of the CENTER. The Director of the CENTER shall be empowered to use membership dues as deemed effective for RESEARCH PROJECT(S) and exploratory research, equipment, administration and other CENTER activities.
- 3.3.1 Dues shall be invoiced as defined in the PRC MEMBERSHIP AGREEMENT, and paid within 45 days of invoice date.
- 3.3.2 Membership shall be effective upon payment of dues and execution of the PRC MEMBERSHIP AGREEMENT. Special payment terms may be allowed with the approval of the Director and GTRC.
- 3.3.3 Memberships will be renewed when the dues and membership renewal documentation are received on or before the date the current Membership Period expires.
- 3.3.4 Where applicable payment of in-kind is permitted and defined in the PRC MEMBERSHIP AGREEMENT. The value of in-kind contributions shall be determined as described in OMB Circular A-110 Subpart C.23(e) and (h) and Georgia Tech Policy. MEMBER shall provide to GTRC written documentation of the fair market value of equipment, fair market value of the use (e.g. lease) of equipment, or the value of the contributed personal services at the time of the contribution. The contribution must be made during the year for which the membership dues are to be paid. In the event that prior to the end of the year for which the membership dues are being paid the MEMBER cannot provide all or part of the in-kind support anticipated at the beginning of the year, MEMBER agrees to pay the difference in cash.

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- 3.3.5 In the event that GTRC terminates this CENTER, MEMBER may receive a prorated refund of the membership dues paid for time periods, which have been paid in advance, after such termination.
- 3.4 **Membership Benefits.** All MEMBERS shall receive the following benefits:
- 3.4.1 One representative to the IAB for the membership.
 - 3.4.2 At least two research review meetings per calendar year held in conjunction with IAB meetings.
 - 3.4.3 Access to CENTER resources, faculty, researchers and students, and activities specified by the CENTER as mutually agreed, to review and verify research results.
 - 3.4.4 Access to the applicable areas of a private, password protected CENTER's MEMBER website.
 - 3.4.5 INTELLECTUAL PROPERTY Rights as defined in Article V.
 - 3.4.6 Project Reports Commensurate with membership level selected in the PRC MEMBERSHIP AGREEMENT covering the effective Membership Period and RESEARCH PROJECT(S).

ARTICLE IV INDUSTRY ADVISORY BOARD

- 4.1 **Composition of IAB.** An IAB for each membership level or program shall be established and shall be comprised of one representative from each MEMBER as defined by the membership levels in the PRC MEMBERSHIP AGREEMENT. A Chair shall be elected by majority vote of the MEMBER representatives to lead the IAB.
- 4.2 **Purpose of the IAB.** The IAB shall advise the CENTER on the research direction, the allocation of resources to achieve the mission of the CENTER, and the operational policies of the CENTER. The IAB may create subcommittees as it deems necessary.
- 4.3 **Meetings of the IAB.** The IAB shall meet at least two times in each calendar year. Notice of the time and place of the regular meetings shall be communicated to each MEMBER at a reasonable time before each meeting.
- 4.4 **Voting Rights.** At all meetings of each IAB, the then-present MEMBER shall constitute a quorum for the transaction of business, and the act of the majority of the voting MEMBER present at any meeting at which there is a quorum shall be the act of the IAB. Any action or resolution that is opposed by a majority of the voting MEMBERS shall not be deemed as accepted by the IAB. Each MEMBER has voting rights as defined in the PRC MEMBERSHIP AGREEMENT for each paid up membership.

ARTICLE V
INTELLECTUAL PROPERTY POLICY

5.1 **Intellectual Property Rights.** GTRC shall grant to MEMBER certain rights and privileges in CENTER-developed INTELLECTUAL PROPERTY relevant to the membership level selected by the MEMBER as defined in the PRC MEMBERSHIP AGREEMENT.

5.2 **Disclosure of Intellectual Property.** INTELLECTUAL PROPERTY and RESEARCH RESULTS resulting from RESEARCH PROJECT(S) performed by the CENTER and funded by MEMBER will be disclosed to GTRC by the inventor(s) or Center STAFF MEMBERS in accordance with GIT and GTRC policy enabling GTRC to grant rights and licenses to MEMBER as set forth herein. MEMBER is given early notification of research breakthroughs associated with the CENTER and thus, are the first to know. Within forty-five (45) days of receipt of any such disclosure, GTRC shall make a non-confidential disclosure available to the MEMBER, as defined in the PRC MEMBERSHIP AGREEMENT, for review. Based on this non-confidential disclosure, MEMBER may acquire further confidential technical and licensing information pursuant to PACKAGING RESEARCH CENTER (PRC) MEMBERSHIP AGREEMENT, Section 15.

5.2.1 GTRC and MEMBER will promptly notify each other of any INTELLECTUAL PROPERTY and/or JOINT INTELLECTUAL PROPERTY conceived, created, or reduced to practice within the scope of the RESEARCH PROJECT(S) and during the term of the Membership Period.

5.3 **Title** to any patent, software or any other product to the extent part of the GTRC INTELLECTUAL PROPERTY funded in whole or in part by CENTER membership dues shall remain exclusively with GTRC and MEMBER shall not be entitled to any rights in such GTRC INTELLECTUAL PROPERTY other than the specific license grants set forth in these BYLAWS. The Intellectual Property Policy of the Georgia Institute of Technology in effect at the time an invention is disclosed to GTRC shall govern the management of INTELLECTUAL PROPERTY developed as a result of the RESEARCH PROJECTS(S) undertaken by the CENTER.

5.3.1 JOINT INTELLECTUAL PROPERTY and RESEARCH PROJECT(S) RESULTS. All rights, title and interest to all JOINT INTELLECTUAL PROPERTY and RESEARCH PROJECT(S) RESULTS which is made, created, or conceived jointly by employees or personnel of any MEMBER or MEMBERS and STAFF MEMBER under membership in the CENTER shall be jointly owned by GTRC and such MEMBER or MEMBERS. RESULTS which is made, created, or conceived by employees or personnel of any MEMBER or MEMBERS shall be owned by such MEMBER or MEMBER.

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- 5.4 **JOINT INTELLECTUAL PROPERTY License.** MEMBER shall have rights to license, subject to the terms and conditions in this Article V, INTELLECTUAL PROPERTY that result from RESEARCH PROJECT(S), as defined for the membership level and/or program selected by the MEMBER in the PRC MEMBERSHIP AGREEMENT. These rights do not include inventions/software resulting from research performed under separate contracts with individual MEMBER or other third parties for other specific research projects.
- 5.5 **Payment of Patent Expenses/Election of License.** Invention disclosures will be made available for review to MEMBERS who have the right to license them per Section 5.2. Such MEMBER agrees to keep any such disclosure confidential pursuant to Section 5.2. Specifically, for inventions, these rights apply if MEMBER were MEMBER on the date of invention. For patentable inventions, each MEMBER will indicate within forty-five (45) days of receipt of invention disclosure, its recommendation as to whether or not the invention should be patented. GTRC, at its option, will file patent applications on any CENTER disclosure or information recommended for patenting by MEMBER. Any positive recommendation by a MEMBER for patenting shall also be a commitment to pay for all (if only one MEMBER is interested) or a pro rata amount of any/all associated patent expenses (if more than one MEMBER is interested), and be an indication that the MEMBER will take a license per Section 5.6. The expenses for any U.S. or foreign patent prosecution, and ongoing maintenance fees, will be paid by MEMBER recommending such a patent(s) be obtained, this is in addition to membership dues fees. Only those MEMBER requesting foreign patent filings shall pay foreign patent costs and be entitled to receive a license to practice the INTELLECTUAL PROPERTY in such foreign jurisdiction.
- 5.6 **License Terms** GTRC shall grant each MEMBER recommending patenting or other protection and paying these costs pursuant to Section 5.5 a perpetual, non-exclusive, no-cost, royalty-free, non-transferable worldwide license, with right to sub-license to its subsidiaries only, to make, have made, use, sell, offer for sale, any patented technology that is supported, in whole or in part, by dues-funded RESEARCH PROJECT(S) for the membership level and/or programs as selected in the PRC MEMBERSHIP AGREEMENT. Any MEMBER recommending patenting and electing a license under this section, who later ceases to pay any/all patent costs pursuant to Section 5.5, shall lose all rights granted under this license. Upon resignation of membership in the CENTER, MEMBER shall lose all rights to any INTELLECTUAL PROPERTY resulting from RESEARCH PROJECT(S) other than rights in those inventions for which MEMBER took a license under 5.5, or 5.9 and for which MEMBER continues to pay any and all applicable patent and/or licensing costs associated with such license and otherwise remains in good standing under the applicable license terms and conditions.
- 5.7 **License Eligibility.** In the event that some but not all eligible MEMBER (MEMBER eligible pursuant to 5.2) elect to pay patent costs and take a license to

an invention pursuant to 5.5, and at a later date a non-electing, eligible MEMBER desires to take a license to the invention under 5.5, such MEMBER shall be granted a license upon payment of its prorated share of the patent costs to-date plus a \$5,000 (five-thousand dollar) license administration fee. In the event that a non-eligible MEMBER desires to take a license to an invention licensed to eligible MEMBER under 5.5, the non-eligible MEMBER shall be granted a license upon payment of a fair and reasonable license fee and its prorated share of the patent costs to-date, such license fee to be no less than a proportionate share of the amount paid by the eligible MEMBER to fund the project which resulted in the invention.

- 5.8 **Licenses to Non-MEMBERS.** In the event a non-MEMBER entity requests a license from GTRC to rights for INTELLECTUAL PROPERTY arising out of CENTER dues funded RESEARCH PROJECT(S) that is not subject to non-disclosure under Section 5.11, GTRC shall negotiate a commercial license with such non-MEMBER, subject to any existing MEMBER rights, for fair and reasonable consideration, which shall at a minimum provide for royalties and a license fee, or equivalent consideration, equal to no less than membership dues at an appropriate dues level for the time over which the licensed invention was developed. GTRC shall not grant any such license earlier than six (6) months after licenses have been granted to MEMBER, delay shall not exceed 12 months from MEMBER agreement to proceed with patent.
- 5.9 **Software Licenses.** Software developed by the CENTER shall be copyrighted by GTRC at its option. MEMBER shall be entitled to a perpetual, non-exclusive, royalty-free end-user license for internal use only to all software resulting from research funded by that MEMBER. These rights do not include software resulting from research performed under contracts with individual MEMBER or other third parties for specific research projects. Others may be granted a non-exclusive, royalty-free, end-user license for internal use only to such software upon payment of a fair and reasonable license fee.
- 5.10 **Compliance with Bayh-Dole Act.** MEMBER acknowledges and agrees that GTRC shall grant the U.S. Government a non-exclusive, nontransferable, paid-up, worldwide license to practice or to have practiced any CENTER INTELLECTUAL PROPERTY developed or resulting from federally funded research.
- 5.11 **Publication Rights.** GTRC reserves the right to publish the results of CENTER research in scientific journals, conferences and proceedings, and GIT Library. However, any MEMBER having rights pursuant to 5.3 shall have the opportunity to review any such article prior to submission for publication for the purpose of identifying patentable developments or any proprietary information owned by the MEMBER. MEMBER shall have thirty (30) days from the date the proposed publication is submitted to MEMBER to request a delay of publication for the purpose of filing patent applications. The delay period shall not exceed a total of one hundred twenty (120) days from the initial date the proposed publication is

submitted to MEMBER. Submission of information for publication will be permitted at any time following filing of a patent application.

- 5.12 **CENTER Termination.** Subject to the conditions of Article V, in the event that the CENTER ceases to exist, any licenses in effect at that time shall survive termination of the CENTER. The rights do not include software, patent applications, or patents, developed under contracts with individual members or other third parties for other research projects funded by separate agreements.
- 5.13 **Membership Agreement.** All MEMBER are bound by the terms of these BYLAWS, in particular the provisions set forth in Article V, via execution of the PRC MEMBERSHIP AGREEMENT which incorporates these BYLAWS by reference.

ARTICLE VI GENERAL

- 6.1 **Notices.** Under the provisions of these BYLAWS whenever notice is required to be given, such notice may be submitted in person, by telephone, e-mail, telecopy, or by mail or private courier, to MEMBER at such address as appears on the records of the CENTER and GTRC at 505 Tenth Street, Atlanta, Georgia 30332-0415, Attn: Director. Written notice shall be deemed to be submitted at the time when the same shall be delivered, received or properly mailed. GTRC is tax-exempt under Section 501 (c)(3) of the Internal Revenue Code of 1986, as amended ("Code") and is a supporting organization of the GIT under Section 509(a)(3) of the Code. GTRC was formed for the purpose of entering into sponsored research contracts for GIT. GTRC owns and administers intellectual property developed at GIT.
- 6.2 **No Effect on Non-Profit Status.** GTRC intends that these BYLAWS comply with the requirements of Section 5.03 of IRS Revenue Procedure 97-14 (and interpretations thereof) dealing with cooperative research agreements and shall be interpreted in a manner consistent with such requirements. GTRC reserves the right to amend these BYLAWS to the extent necessary to ensure GTRC's continued tax-exempt status or continued compliance with tax covenants made by GTRC in connection with the issuance of tax-exempt bonds, or to comply with other laws or regulations.
- 6.3 **Amendments.** The CENTER, alone or upon the recommendation of its membership, may propose amendments to these BYLAWS and/or such additional bylaws as it may deem necessary, which, upon written approval of GTRC, shall govern the operation of the CENTER.