

REPURCHASE AGREEMENT

THIS REPURCHASE AGREEMENT (this "**Agreement**") is made on November 20, 2006 between ART Advanced Research Technologies Inc., a Canadian corporation (the "**Company**"), and Smithfield Fiduciary LLC (the "**Investor**").

WHEREAS, the Company and the Investor entered into that certain Securities Purchase Agreement, dated as of July 28, 2005 (the "**Securities Purchase Agreement**"), pursuant to which, among other things, the Investor purchased from the Company a Senior Secured Convertible Note, dated as of July 28, 2005 (the "**Note**"), which is convertible into common shares of the Company's, no par value per share, in accordance with the terms thereof. Capitalized terms used herein and not otherwise defined herein shall have the respective meanings ascribed to them in the Note.

WHEREAS, the Company and the Investor desire to enter into this Agreement, pursuant to which, among other things, (i) the Company shall repurchase \$375,000 in outstanding principal amount of the Note plus accrued and unpaid interest thereon through the Closing Date (as defined below) (the "**Accrued Interest**") (collectively, the "**Repurchased Amount**") for the sum of (x) \$431,250, representing the outstanding principal amount of the Note plus a premium of \$56,250 (the "**Premium**") and (y) the Accrued Interest (collectively, the "**Repurchase Price**").

NOW, THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the adequacy of which is hereby acknowledged, the parties hereto agree as follows:

Section 1 *Repurchase.*

(a) *Repurchase.* The Company hereby agrees to repurchase from the Investor the Repurchased Amount, which amount shall be purchased by the Company in cash at the Repurchase Price.

(b) *Closing.* Subject to the satisfaction or waiver of the conditions set forth in Section 3 below, at the closing contemplated by this Agreement (the "**Closing**"), the transactions contemplated hereby shall be consummated and the Note shall be cancelled. The date and time of the Closing (the "**Closing Date**") shall be 3:00 p.m., New York City time, on the date hereof, subject to notification of satisfaction or waiver of the conditions to the closing set forth in Section 4 below (or such other time and date as is mutually agreed to by the Company and the Investor). The Closing shall occur on the Closing Date at the office of Schulte Roth & Zabel LLP, 919 Third Avenue, New York, New York 10022.

(c) *Form of Payment.* On the Closing Date, the Company shall pay the Repurchase Price to the Investor for the Repurchased Amount by the deposit with Osler, Hoskin & Harcourt LLP, as escrow agent (the "**Escrow Agent**"), by cheque or wire transfer in immediately available funds, of an amount equal to the Repurchase Price (less any applicable withholding tax pursuant to subsection (e) below) (the "**Escrow Amount**"), to be held in escrow by the Escrow Agent and

governed by the terms of an escrow agreement to be entered into among the Company, the Investor and the Escrow Agent concurrently to this Agreement (the "**Escrow Agreement**"). The Escrow Agreement will provide for the release and payment of the Escrow Amount by the Escrow Agent to the Investor, by wire transfer of immediately available funds in accordance with the Investor's written wire instructions, upon the proposed plan of arrangement (the "**Arrangement**") involving the Company, New ART Advanced Research Technologies Inc., Matco Capital Ltd. and the securityholders of the Company (the "**Securityholders**") described in the Management Proxy Circular of the Company dated October 24, 2006 (the "**Circular**") being effective and the Company having received the proceeds of CAD\$5,850,000 in connection with the issuance of the Matco Debenture (as defined in the Circular as part of the Arrangement) (the "**Escrow Release Conditions**").

(d) *Escrow.* Notwithstanding the foregoing, if at 5:00 p.m. on November 28, 2006 the Escrow Release Conditions have not been satisfied, (i) the repurchase of the Repurchased Amount pursuant to Section 1(c) above shall be null and void *ab initio* and deemed to never have been consummated, and (ii) the Escrow Amount shall be released and paid by the Escrow Agent to New ART (or any applicable successor) ("**New ART**").

(e) *Withholding.* The Company shall be entitled to deduct from the Repurchase Price all taxes which may be required to be deducted or withheld under any provision of applicable tax laws in respect of the Premium and Accrued Interest.

Section 2. Representations And Warranties.

(a) *Authorization; Enforcement; Validity.* The Company has the requisite power and authority to enter into and perform its obligations under this Agreement. This Agreement has been duly and validly executed and delivered by the Company and constitutes the legal, valid and binding obligation of the Company, enforceable in accordance with its terms, except as such enforceability may be limited by applicable bankruptcy, insolvency, moratorium, reorganization or similar laws from time to time in effect that affect creditors' rights generally, and by legal and equitable limitations on the availability of specific remedies.

(b) *No Conflicts.* The execution, delivery and performance by the Company of this Agreement and consummation by the Company of the transactions contemplated by this Agreement do not and will not: (i) violate the organizational documents of the Company, (ii) violate any decree or judgment of any court or other governmental authority applicable to or binding on the Company; (iii) violate any provision of any federal or state statute, rule or regulation which is applicable to the Company; or (iv) violate any contract to which the Company or any of its assets or properties are bound, or conflict with, or constitute a default (or an event which with notice or lapse of time or both would become a default) under, or give to others any rights of termination, amendment, acceleration or cancellation of any agreement, indenture or instrument to which Company is a party.

(c) *Approvals; No Suspensions.* The Company has obtained all governmental, regulatory or third party consents and approvals if any, and approval from its shareholders, necessary, if any, to consummate the transactions contemplated by this Agreement.

Section 3. Conditions to Investor's Obligations Hereunder. The obligations of the Investor to the Company hereunder are subject to the satisfaction of each of the following conditions, *provided* that these conditions are for Investor's sole benefit and may be waived by Investor at any time in its sole discretion by providing the Company with prior written consent thereof.

(a) The Company shall have executed this Agreement and delivered the same to the Investor.

(b) The Company shall have satisfied the payment of the Repurchase Price to the Investor for the Repurchased Amount in accordance with Section 1(c) above.

(c) The representations and warranties of the Company in Section 2 hereof shall be true and correct as of the date when made and as of the Closing Date as though made at that time (except for representations and warranties that speak as of a specific date, which shall be true and correct as of such specified date).

(d) Each of the holders of the other Senior Secured Convertible Notes of the Company (the "**Other Notes**") shall have entered into agreements (collectively, the "**Other Repurchase Agreements**") identical to this Agreement. In connection with this Agreement, the Company represents and warrants that none of the terms offered to the holders of Other Notes is more favorable to such holder than those of the Investor and this Agreement shall be, without any further action by the Investor or the Company, deemed amended and modified in an economically and legally equivalent manner such that the Investor shall receive the benefit of the more favorable terms contained in the Other Repurchase Agreements. Notwithstanding the foregoing, the Company agrees, at its expense, to take such other actions (such as entering into amendments to this Agreement) as the Investor may reasonably request to further effectuate the foregoing.

Section 4. Releases. Upon release and payment by the Escrow Agent to the Investor of the Escrow Amount, all hypothecs, security interests and other Liens held by the Investor (or by any collateral agent or *fondé de pouvoir* acting on behalf of the Investor) on the property of the Company or any related entity securing such obligations thereupon will terminate and be released without the necessity of any further action by the Investor or the Company.

Section 5 Release Documents: Authorization to File. Upon the release and payment by the Escrow Agent to the Investor of the Escrow Amount, the Company and its agents and legal counsel are authorized to make any filings of record to reflect such releases, discharges, acquittances, mortgage releases, intellectual property releases, cancellations, and terminations required to discharge any security in favour of the Investor (by any collateral agent or *fondé de pouvoir* acting on behalf of the Investor), and (b) the Investor agrees to promptly execute and deliver, or cause to be executed and delivered, at the Company's request and at the Company's expense, any additional documents, instruments or agreements reasonably necessary to effect the foregoing terminations, discharges, acquittances, cancellations and releases.

Section 6 Delivery of Note. Within (3) Business Days after the receipt by the Investor of the Escrow Amount, the Investor shall deliver or caused to be delivered the original Note to the Company for cancellation.

Section 7 Meeting of Securityholders to Approve the Arrangement. The Investor shall abstain from voting at the special meeting of the Securityholders to be held on November 22, 2006 (subject to any adjournment(s) thereof) to consider and, if deemed advisable, approve the special resolution submitted to the Securityholders for the purpose of approving of Arrangement.

Section 8. Miscellaneous.

(a) *Governing Law; Jurisdiction; Jury Trial.* All questions concerning the construction, validity, enforcement and interpretation of this Agreement shall be governed by the internal laws of the State of New York, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of New York or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of New York. Each party hereby irrevocably submits to the non-exclusive jurisdiction of the state and federal courts sitting in The City of New York, Borough of Manhattan, for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is brought in an inconvenient forum or that the venue of such suit, action or proceeding is improper. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof to such party at the address for such notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. **EACH PARTY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH OR ARISING OUT OF THIS AGREEMENT OR ANY TRANSACTION CONTEMPLATED HEREBY.**

(b) *Counterparts.* This Agreement may be executed in two or more identical counterparts, all of which shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to the other party; provided that a facsimile signature shall be considered due execution and shall be binding upon the signatory thereto with the same force and effect as if the signature were an original, not a facsimile signature.

(c) *Headings.* The headings of this Agreement are for convenience of reference and shall not form part of, or affect the interpretation of, this Agreement.

(d) *Severability.* If any provision of this Agreement shall be invalid or unenforceable in any jurisdiction, such invalidity or unenforceability shall not affect the validity or

enforceability of the remainder of this Agreement in that jurisdiction or the validity or enforceability of any provision of this Agreement in any other jurisdiction.

(e) *No Third Party Beneficiaries.* This Agreement is intended for the benefit of the parties hereto and their respective permitted successors and assigns, and is not for the benefit of, nor may any provision hereof be enforced by, any other Person.

(f) *No Strict Construction.* The language used in this Agreement will be deemed to be the language chosen by the parties to express their mutual intent, and no rules of strict construction will be applied against any party.

(g) *Successors and Assigns.* This Agreement shall be binding upon and inure to the benefit of the parties and their respective successors and assigns in accordance with the terms of the Securities Purchase Agreement.

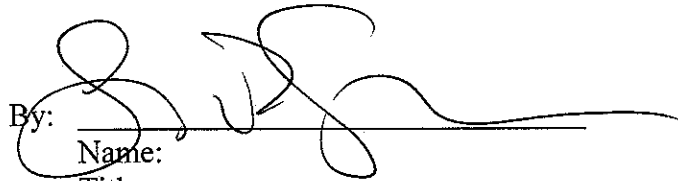
(h) *Further Assurances.* Each party shall do and perform, or cause to be done and performed, all such further acts and things, and shall execute and deliver all such other agreements, certificates, instruments and documents, as the other party may reasonably request in order to carry out the intent and accomplish the purposes of this Agreement and the consummation of the transactions contemplated hereby.

(i) *Survival.* The representations and warranties of the Company and the Investor contained herein and the agreements and covenants set forth herein shall survive the Closing.

(j) *Remedies.* Any Person having any rights under any provision of this Agreement shall be entitled to enforce such rights specifically (without posting a bond or other security), to recover damages by reason of any breach of any provision of this Agreement and to exercise all other rights granted by law.


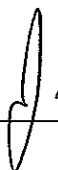

IN WITNESS WHEREOF, the Company and the Investor have caused their respective signature page to this Repurchase Agreement to be duly executed as of the date first written above.

**ART ADVANCED RESEARCH
TECHNOLOGIES INC.**

By: 
Name:
Title:

IN WITNESS WHEREOF, the Company and the Investor have caused their respective signature page to this Repurchase Agreement to be duly executed as of the date first written above.

SMITHFIELD FIDUCIARY LLC

By:   

Name:
Title: