

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT3512285

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT	
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT	
<b>CONVEYING PARTY DATA</b>		
	<b>Name</b>	<b>Execution Date</b>
	JOHN T. MAC DONALD	08/27/2015
<b>RECEIVING PARTY DATA</b>		
<b>Name:</b>	GT CRYSTAL SYSTEMS, LLC	
<b>Street Address:</b>	27 CONGRESS STREET	
<b>City:</b>	SALEM	
<b>State/Country:</b>	MASSACHUSETTS	
<b>Postal Code:</b>	01970	
<b>PROPERTY NUMBERS Total: 1</b>		
<b>Property Type</b>	<b>Number</b>	
<b>Application Number:</b>	14488476	
<b>CORRESPONDENCE DATA</b>		
<b>Fax Number:</b>	(617)918-7878	
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>		
<b>Phone:</b>	617-918-7600	
<b>Email:</b>	patent@piblaw.com, elaine.cruz@piblaw.com	
<b>Correspondent Name:</b>	PARKER IBRAHIM & BERG LLC	
<b>Address Line 1:</b>	ONE FINANCIAL CENTER	
<b>Address Line 4:</b>	BOSTON, MASSACHUSETTS 02111	
<b>ATTORNEY DOCKET NUMBER:</b>	0150043.U	
<b>NAME OF SUBMITTER:</b>	STEPHEN D. LEBARRON	
<b>SIGNATURE:</b>	/Stephen D. LeBarron/	
<b>DATE SIGNED:</b>	09/03/2015	
<b>Total Attachments: 4</b>		
source=0150043U_SignedAssignment#page1.tif		
source=0150043U_SignedAssignment#page2.tif		
source=0150043U_SignedAssignment#page3.tif		
source=0150043U_SignedAssignment#page4.tif		

## ASSIGNMENT BY INVENTOR

**THIS ASSIGNMENT**, made this 27th day of August, 2015, 2014, by John T. Mac Donald (hereinafter referred to as Assignor), residing at 39 Middlesex Avenue, Reading, Massachusetts 01867;

**WHEREAS**, Assignor has invented certain new and useful improvements in METHOD OF AUTOMATICALLY MEASURING SEED MELT BACK OF CRYSTALLINE MATERIAL, set forth in a Patent application for Letters Patent of the United States, already filed on September 17, 2014 as U.S. Application No. 14/488,476; and

**WHEREAS**, GT Crystal Systems, LLC, a corporation organized under and pursuant to the laws of Delaware having its principal place of business at 27 Congress Street, Salem, Massachusetts 01970 (hereinafter referred to as Assignee), is desirous of acquiring the entire right, title and interest in and to said inventions and said Application for Letters Patent of the United States, and in and to any Letters Patent of the United States to be obtained therefore and thereon.

**NOW, THEREFORE**, for good and sufficient consideration, the receipt of which is hereby acknowledged, Assignor has sold, assigned, transferred and set over, and by these presents does sell, assign, transfer and set over, unto Assignee, its successors, legal representatives and assigns, the entire right, title and interest in and to the above-mentioned inventions and application for Letters Patent, and in and to any and all direct and indirect divisions, continuations and continuations-in-part of said application, and any and all Letters Patent in the United States and all foreign countries which may be granted therefor and thereon, and reissues, reexaminations and extensions of said Letters Patent, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by Assignee, for its own use and benefit and the use and benefit of its successors, legal representatives and assigns, to the full end of the term or terms for which Letters Patent may be granted and/or extended, as fully and entirely as the same would have been held and enjoyed by Assignor, had this sale and assignment not been made.

**AND** for the same consideration, Assignor hereby represents and warrants to Assignee, its successors, legal representatives and assigns, that, at the time of execution and

delivery of these presents, except for any rights, titles and/or interests that have arisen to Assignee under law or that have already been transferred to Assignee, Assignor is the sole and lawful owner of the entire right, title and interest in and to the said inventions and application for Letters Patent above-mentioned, and that the same are unencumbered and that Assignor has good and full right and lawful authority to sell and convey the same in the manner herein set forth.

**AND** for the same consideration, Assignor hereby covenants and agrees to and with Assignee, its successors, legal representatives and assigns that: Assignor will sign all papers and documents, take all lawful oaths and do all acts necessary or required to be done for the procurement, maintenance, enforcement and defense of any Letters Patent and applications for Letters Patent for said inventions, without charge to Assignee, its successors, legal representatives and assigns, whenever counsel of Assignee, or counsel of its successors, legal representatives and assigns, shall advise; that any proceeding in connection with said inventions, or said Patent application for Letters Patent, or any proceeding in connection with any Letters Patent or applications for Letters Patent for said inventions in any country, including but not limited to interference proceedings, is lawful and desirable; and, that any division, continuation or continuation-in-part of any application for Letters Patent, or any reissue, reexamination or extension of any Letters Patent, to be obtained thereon, is lawful and desirable.

**AND** Assignor hereby requests the Commissioner of Patent and Trademarks to issue said Letters Patent of the United States to Assignee, as Assignee of said inventions and the Letters Patent to be issued thereon, for the sole use and benefit of Assignee, its successors, legal representatives and assigns.

**AND** Assignor hereby grants the following individuals the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document:

EDWARDS WILDMAN PALMER LLP

All practitioners at Customer Number 21874

**AND** Assignor acknowledges an obligation of assignment of this invention to Assignee at the time the invention was made.

