

## TRADEMARK ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

ETAS ID: TM513191

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT		
<b>NATURE OF CONVEYANCE:</b>	Supplement No. 1 to Amended and Restated Intellectual Property Security Agreement		
<b>CONVEYING PARTY DATA</b>			
<b>Name</b>	<b>Formerly</b>	<b>Execution Date</b>	<b>Entity Type</b>
KTT Core, Inc.		03/01/2019	Corporation:
FTT America, LLC		03/01/2019	Limited Liability Company:
Turbine Export, Inc.		03/01/2019	Corporation:
Elwood Investments LLC		03/01/2019	Limited Liability Company:
Consolidated Turbine Specialists LLC		03/01/2019	Limited Liability Company:
S&J Design LLC		03/01/2019	Limited Liability Company:
Florida Turbine Technologies Inc.		03/01/2019	Corporation:
<b>RECEIVING PARTY DATA</b>			
<b>Name:</b>	Suntrust Bank		
<b>Street Address:</b>	303 Peachtree Street NE, 25th Floor		
<b>City:</b>	Atlanta		
<b>State/Country:</b>	GEORGIA		
<b>Postal Code:</b>	30308		
<b>Entity Type:</b>	Corporation: GEORGIA		
<b>PROPERTY NUMBERS Total: 1</b>			
<b>Property Type</b>	<b>Number</b>	<b>Word Mark</b>	
<b>Registration Number:</b>	4663234	ARTIC	
<b>CORRESPONDENCE DATA</b>			
<b>Fax Number:</b>	6175236850		
<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>	617-523-2700		
<b>Email:</b>	susan.dinicola@hklaw.com,cody.cravens@hklaw.com		
<b>Correspondent Name:</b>	Holland & Knight LLP		
<b>Address Line 1:</b>	10 St. James Avenue		
<b>Address Line 4:</b>	Boston, MASSACHUSETTS 02116		
<b>NAME OF SUBMITTER:</b>	Susan C. DiNicola/		

OP \$40.00 4663234

<b>SIGNATURE:</b>	/Susan C. DiNicola/
<b>DATE SIGNED:</b>	03/07/2019
<b>Total Attachments: 19</b>	
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**SUPPLEMENT NO. 1 TO**  
**AMENDED AND RESTATED INTELLECTUAL PROPERTY SECURITY**  
**AGREEMENT**

This SUPPLEMENT NO. 1 TO AMENDED AND RESTATED INTELLECTUAL PROPERTY SECURITY AGREEMENT (as amended, restated, amended and restated, modified, supplemented, extended, joined and/or restated from time to time, the “Supplement”) dated as of March 1, 2019, is made by each Person listed on the signature page hereof (individually, each a “Grantor” and collectively, the “Grantors”) in favor of SUNTRUST BANK, a Georgia banking corporation (“SunTrust”), administrative agent and as collateral agent for the Lenders (together with its successors and assigns in such capacities, “Agent”) pursuant to that certain Amended and Restated Intellectual Property Security Agreement, dated as of November 20, 2017, and as recorded with the United States Patent and Trademark Office with respect to trademarks, on December 6, 2017, at Reel 6252 Frame 0122, and with respect to patents, on December 7, 2017, at Reel 044742 Frame 0845 (as it may be from time to time amended, restated, amended and restated, modified or supplemented, the “IP Security Agreement”). Capitalized terms used herein and not otherwise defined herein shall have the meanings ascribed thereto in the IP Security Agreement.

Each Grantor hereby confirms the grant to Agent, for the benefit of the Lenders, of a security interest (subject to Section 4 of the IP Security Agreement) in all of the Collateral, including (without limitation) all of such Grantor’s future Collateral, irrespective of any lack of knowledge by Agent or the Lenders of the creation or acquisition thereof. Each Grantor hereby agrees that the attached Schedule 1 shall constitute part of and an addition to Schedule 1 to the IP Security Agreement.

*[Remainder of page intentionally left blank]*

IN WITNESS WHEREOF, each Grantor has caused this Supplement to be duly executed and delivered by its officer thereunto duly authorized as of the date first above written.

**GRANTORS:**

**KTT CORE, INC.  
FTT AMERICA, LLC  
TURBINE EXPORT, INC.  
ELWOOD INVESTMENTS LLC  
CONSOLIDATED TURBINE SPECIALISTS LLC  
S & J DESIGN LLC  
FLORIDA TURBINE TECHNOLOGIES INC.**

By: 

Name: Deanna H. Lund

Title: Executive Vice President and Chief  
Financial Officer

ACKNOWLEDGMENT OF GRANTORS

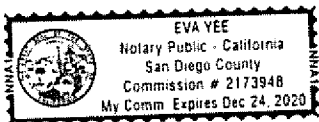
A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California )
County of San Diego ) ss.

On this 28th day of February, 2019, before me, Eva Yee, Notary Public, personally appeared Deanna H. Lund, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



[Signature]
Notary Public

SCHEDULE 1

[GRANTORS TO PROVIDE]

**(i) Patent Information of the Acquired Companies:**

Patent #	App. No.	Filing Date	Patent #	Issue Date	Country	Title
22115-1920N	110243.792	10/8/2005	7497995	3/3/2008	FTT Inc.	Multi-Metered Film Coated Blade Tip
22115-18PDE	10771862	5/4/2012	EP2468830	10/8/2014	FTT Inc.	Bearingless Floating Wind Turbine
22115-18PDK	10771862	5/4/2012	EP2468830	10/8/2014	FTT Inc.	Bearingless Floating Wind Turbine
22115-18PEP	10771862	5/4/2012	EP2468830	10/8/2014	FTT Inc.	Bearingless Floating Wind Turbine
22115-18PEB	10771862	5/4/2012	EP2468830	10/8/2014	FTT Inc.	Bearingless Floating Wind Turbine
22115-18PFR	10771862	5/4/2012	EP2468830	10/8/2014	FTT Inc.	Bearingless Floating Wind Turbine
22115-18PGB	10771862	5/4/2012	EP2468830	10/8/2014	FTT Inc.	Bearingless Floating Wind Turbine
22115-18PAG	10771862	5/4/2012	EP2468830	10/8/2014	FTT Inc.	Bearingless Floating Wind Turbine
22115-20CAPCA	2014247	12/8/2015			FTT Inc.	Process For Testing A Compressor Of A Combustor Of A Gas Turbine Engine Using A Large Compressed Air Storage Reservoir. E.U.
22115-20CAPCA	17306700.7	11/8/2017			FTT Inc.	Process For Testing A Compressor Of A Combustor Of A Gas Turbine Engine Using A Large Compressed Air Storage Reservoir. E.U.
22115-20PAG	1120136252044	9/29/2013	AU20132237974	11/28/2015	FTT Inc.	Apparatus And Process For Testing An Industrial Gas Turbine Engine And Components Thereof
22115-20PBR	1120136252044	9/29/2013			FTT Inc.	Apparatus And Process For Testing An Industrial Gas Turbine Engine And Components Thereof
22115-20PCG		9/27/2013	CA2552198	8/21/2018	FTT Inc.	Apparatus And Process For Testing An Industrial Gas Turbine Engine And Components Thereof
22115-20PCN		11/28/2013	ZL2012006252044.6	3/25/2017	FTT Inc.	Apparatus And Process For Testing An Industrial Gas Turbine Engine And Components Thereof
22115-20PCZ	20120712183	3/15/2012	EP2691757	5/3/2017	FTT Inc.	Apparatus And Process For Testing An Industrial Gas Turbine Engine And Components Thereof
22115-20PDE	WQ2012134824 602012031993.7	3/29/2012			FTT Inc.	Apparatus And Process For Testing An Industrial Gas Turbine Engine And Components Thereof
22115-20PEK	20120712183	3/15/2012	EP2691757	5/3/2017	FTT Inc.	Apparatus And Process For Testing An Industrial Gas Turbine Engine And Components Thereof
22115-20PEF		7/11/2014	EP2691757	5/3/2017	FTT Inc.	Apparatus And Process For Testing An Industrial Gas Turbine Engine And Components Thereof
22115-20PEF	20120712183	3/15/2012	EP2691757	5/3/2017	FTT Inc.	Apparatus And Process For Testing An Industrial Gas Turbine Engine And Components Thereof
22115-20PEB		6/12/2017	EP2691757	5/3/2017	FTT Inc.	Apparatus And Process For Testing An Industrial Gas Turbine Engine And Components Thereof
22115-20PEE	20120712183	3/15/2012	EP2691757	5/3/2017	FTT Inc.	Apparatus And Process For Testing An Industrial Gas Turbine Engine And Components Thereof
22115-20PEW	20120712183	3/15/2012			FTT Inc.	Apparatus And Process For Testing An Industrial Gas Turbine Engine And Components Thereof
22115-20PHY	20120712183	3/15/2012	EP2691757	5/3/2017	FTT Inc.	Apparatus And Process For Testing An Industrial Gas Turbine Engine And Components Thereof
22115-20PLY	20120712183	3/15/2012	EP2691757	5/3/2017	FTT Inc.	Apparatus And Process For Testing An Industrial Gas Turbine Engine And Components Thereof
22115-20PMK		9/27/2013	WQ20130005	5/10/2018	FTT Inc.	Apparatus And Process For Testing An Industrial Gas Turbine Engine And Components Thereof
22115-20PKL	20120712183	3/15/2012	EP2691757	5/3/2017	FTT Inc.	Apparatus And Process For Testing An Industrial Gas Turbine Engine And Components Thereof
22115-20PKL	20120712183	3/15/2012	EP2691757	5/3/2017	FTT Inc.	Apparatus And Process For Testing An Industrial Gas Turbine Engine And Components Thereof
22115-20PKY	20120712183	3/15/2012	EP2691757	5/3/2017	FTT Inc.	Apparatus And Process For Testing An Industrial Gas Turbine Engine And Components Thereof
22115-20PUE	14608.308	11/13/2013	8662803	12/1/2015	FTT Inc.	Apparatus And Process For Testing An Industrial Gas Turbine Engine And Components Thereof
22115-24PCH	20140752888	7/28/2014	EP3058178		FTT Inc.	Gas Turbine Engine With Liquid Metal Cooling. E.U.
22115-24PCH			ZL20140009746.4		FTT Inc.	Gas Turbine Engine With Liquid Metal Cooling. China
22115-24PDE	20140752888	7/28/2014	EP3058178		FTT Inc.	Gas Turbine Engine With Liquid Metal Cooling. E.U.
22115-24PEP	20140752888	7/28/2014	EP3058178		FTT Inc.	Gas Turbine Engine With Liquid Metal Cooling. E.U.
22115-24PEB	20140752888	7/28/2014	EP3058178		FTT Inc.	Gas Turbine Engine With Liquid Metal Cooling. E.U.
22115-24PEF	20140752888	7/28/2014	EP3058178		FTT Inc.	Gas Turbine Engine With Liquid Metal Cooling. E.U.
22115-24PEB	20140752888	7/28/2014	EP3058178		FTT Inc.	Gas Turbine Engine With Liquid Metal Cooling. E.U.
22115-24PHY	20140752888	7/28/2014	EP3058178		FTT Inc.	Gas Turbine Engine With Liquid Metal Cooling. E.U.
22115-24PLP	20140752888	7/28/2014	EP3058178		FTT Inc.	Gas Turbine Engine With Liquid Metal Cooling. E.U.
22115-24PKL	20140752888	7/28/2014	EP3058178		FTT Inc.	Gas Turbine Engine With Liquid Metal Cooling. E.U.
22115-25PDK	20140001688.00	9/11/2014	ZL201400051988.3	10/29/2017	FTT Inc.	High Pressure Ratio Twin Spool Industrial Gas Turbine Engine
22115-25PEP	14772839	3/10/2019			FTT Inc.	High Pressure Ratio Twin Spool Industrial Gas Turbine Engine
22115-25PKL	201687004610.00	3/11/2019			FTT Inc.	High Pressure Ratio Twin Spool Industrial Gas Turbine Engine
22115-25PPL	2016-024934	4/15/2016	8658913.00	8/22/2018	FTT Inc.	High Pressure Ratio Twin Spool Industrial Gas Turbine Engine

22115-25PXR	20167090658	4/3/2016	1678241.00	7/18/2018	FTT Inc.	High Pressure Ratio Twin Spool Industrial Gas Turbine Engine
22115-25PUS	45921.521	3/11/2016			FTT Inc.	High Pressure Ratio Twin Spool Industrial Gas Turbine Engine
22115-26PCK	642876813	8/4/2017			FTT Inc.	Apparatus And Process Of Retrofitting A Combined Cycle Power Plant
22115-26PCN	261688020316.00	8/30/2017			FTT Inc.	Apparatus And Process Of Retrofitting A Combined Cycle Power Plant
22115-26PEP	18721275.20	8/30/2017			FTT Inc.	Apparatus And Process Of Retrofitting A Combined Cycle Power Plant
22115-26PFI	201727028792.00	8/11/2017			FTT Inc.	Apparatus And Process Of Retrofitting A Combined Cycle Power Plant
22115-26PFR	133603140030508000.00	8/30/2017			FTT Inc.	Apparatus And Process Of Retrofitting A Combined Cycle Power Plant
22115-26PJP	2017-561385	8/7/2017			FTT Inc.	Apparatus And Process Of Retrofitting A Combined Cycle Power Plant
22115-26PJR	10-2017-7024460	8/31/2017			FTT Inc.	Apparatus And Process Of Retrofitting A Combined Cycle Power Plant
22115-26PJK	NK2017010201	8/7/2017			FTT Inc.	Apparatus And Process Of Retrofitting A Combined Cycle Power Plant
22115-26PPL	2017131217.00	8/5/2017			FTT Inc.	Apparatus And Process Of Retrofitting A Combined Cycle Power Plant
22115-26PQA	317882364.00	8/8/2017			FTT Inc.	Apparatus And Process Of Retrofitting A Combined Cycle Power Plant
22115-26PUS	15549050	8/4/2017			FTT Inc.	Apparatus And Process Of Retrofitting A Combined Cycle Power Plant
22115-27PEP	18710889.70	9/28/2018			FTT Inc.	Turbine Last Stage Rotor Blade With Fixed Driven Cooling Air
22115-27PWS	PCTUS181021217	9/7/2018			FTT Inc.	Turbine Last Stage Rotor Blade With Fixed Driven Cooling Air
22115-28PEP	16710365.00	9/28/2018			FTT Inc.	Turbine Stator Vane With Inset And Flexible Seal
22115-28PWS	PCTUS181020945	9/4/2018			FTT Inc.	Turbine Stator Vane With Inset And Flexible Seal
22115-28PWO	PCTUS181040388	7/28/2018			FTT Inc.	Turboscharger With Oil-Free Hydrostatic Bearing
22115-30FOE	162018214476.00	8/4/2016			FTT Inc.	
22115-32PAG	2018352459.00	4/30/2018			FTT Inc.	CAES Combustor Test Facility
22115-32PCA	3078984.00	4/18/2018			FTT Inc.	CAES Combustor Test Facility
22115-32PCN	201660269755.40	5/28/2018			FTT Inc.	CAES Combustor Test Facility
22115-32PEP	16779262.10	4/30/2018			FTT Inc.	CAES Combustor Test Facility
22115-32PIN	2016337019589.00	4/7/2018			FTT Inc.	CAES Combustor Test Facility
22115-32PMDN		8/7/2018			FTT Inc.	CAES Combustor Test Facility
22115-32PUS	15739410	3/30/2018			FTT Inc.	CAES Combustor Test Facility
22115-33PBL	8R112018018024.6	7/23/2018			FTT Inc.	Turbopump With A Single Piece Housing And A Smooth Enamel Glass Surface
22115-33PEP	17702733.10	7/31/2018			FTT Inc.	Turbopump With A Single Piece Housing And A Smooth Enamel Glass Surface
22115-33PJK	165402916468002	7/23/2018			FTT Inc.	Turbopump With A Single Piece Housing And A Smooth Enamel Glass Surface
22115-33PMDN		8/7/2018			FTT Inc.	Turbopump With A Single Piece Housing And A Smooth Enamel Glass Surface
22115-33PUS	PCTUS20161072067	7/23/2018			FTT Inc.	Turbopump With A Single Piece Housing And A Smooth Enamel Glass Surface
22115-33PWS	PCTUS20171014239	1/29/2017			FTT Inc.	Turbopump With A Single Piece Housing And A Smooth Enamel Glass Surface
22115-34PCN					FTT Inc.	Industrial Gas Turbine Engine With First And Second Stage Rotor Cooling
22115-34PEP					FTT Inc.	Industrial Gas Turbine Engine With First And Second Stage Rotor Cooling
22115-34PIN					FTT Inc.	Industrial Gas Turbine Engine With First And Second Stage Rotor Cooling
22115-34PJP					FTT Inc.	Industrial Gas Turbine Engine With First And Second Stage Rotor Cooling
22115-34PJR					FTT Inc.	Industrial Gas Turbine Engine With First And Second Stage Rotor Cooling
22115-34PUS					FTT Inc.	Industrial Gas Turbine Engine With First And Second Stage Rotor Cooling
22115-34PWS	PCTUS20171173820	3/6/2017			FTT Inc.	Industrial Gas Turbine Engine With First And Second Stage Rotor Cooling
22115-36PUS	PCTUS2016084376	10/17/2016			FTT Inc.	High Pressure Compressor Effluxer For An Industrial Gas Turbine Engine
22115-36PWO	PCTUS2017128152	4/24/2017			FTT Inc.	High Pressure Compressor Effluxer For An Industrial Gas Turbine Engine
22115-38PCN					FTT Inc.	Process For Retrofitting An Industrial Gas Turbine Engine For Increased Power And Efficiency
22115-38PEP					FTT Inc.	Process For Retrofitting An Industrial Gas Turbine Engine For Increased Power And Efficiency
22115-38PJR					FTT Inc.	Process For Retrofitting An Industrial Gas Turbine Engine For Increased Power And Efficiency
22115-38PUS	PCTUS20181015890	11/14/2018			FTT Inc.	Process For Retrofitting An Industrial Gas Turbine Engine For Increased Power And Efficiency
22115-38PWS	PCTUS2017102708	5/15/2017			FTT Inc.	Process For Retrofitting An Industrial Gas Turbine Engine For Increased Power And Efficiency
22115-37PCN					FTT Inc.	Twin Spool Industrial Gas Turbine Engine With Variable Inlet Guide Vanes
22115-37PJR					FTT Inc.	Twin Spool Industrial Gas Turbine Engine With Variable Inlet Guide Vanes
22115-37PWO	PCTUS2017128401	4/25/2017			FTT Inc.	Twin Spool Industrial Gas Turbine Engine With Variable Inlet Guide Vanes
22115-38PWO					FTT Inc.	
22115-39PWS	PCTUS2017106558	6/1/2017			FTT Inc.	Turbine Stator Vane With Multiple Outer Diameter Pressure Feeds
22115-40PWS	PCTUS2017071148	8/18/2017			FTT Inc.	Turbine Stator Vane With Closed-Loop Sequential Engagement Cooling Inlet
22115-41PWS	PCTUS2017102259	8/18/2017			FTT Inc.	Cooled Combustor Case With Over-Pressurized Cooling Air
22115-43PWO	PCTUS2017046584	8/2/2016			FTT Inc.	Blade Outer Air Seal With Cooled Non-Symmetric Curved Teeth
22115-44PWO	PCTUS2017183248	8/11/2017			FTT Inc.	High Pressure Ratio Twin Spool Industrial Gas Turbine Engine With Dual Flow High Spool Compressor
22115-45PWO	PCTUS2017180395	9/18/2017			FTT Inc.	Apparatus And Process For Testing A Large Compressor Using A Case Facility
22115-46PWO	PCTUS2017185190	10/8/2017			FTT Inc.	Rax Seal For A Turbine



22115-47PWS	PCTUS201702024	6/3/2017			FTT Inc.	Advanced Lean Burn Injector Igniter System
22115-46PWS	PCTUS20170202225	8/19/2017			FTT Inc.	Apparatus And Process For Co-sourcing An Aero Gas Turbine Engine Into An Industrial Gas Turbine Engine For Electric Power Production
22115-46PWS	PCTUS201708162	12/22/2017			FTT Inc.	Blade Outer Air Seal With Coated Non-Symmetric Grooved Teeth
22115-60PWO	PCTUS201708896	10/30/2017			FTT Inc.	Apparatus And Process For Removing Support Structure From A 3D Printed Part
22115-61PWO	PCTUS2018101716	10/26/2018			FTT Inc.	Turbine-charged Gas Turbine Engine With Electric Power Generation For Small Aircraft Electric Propulsion
22115-63PWO	PCTUS2018088747	8/21/2018			FTT Inc.	Apparatus And Process For Refining Features In An Additive Manufactured Part
22115-603F	11081_315	3/18/2005	7385556	11/27/2007	FTT Inc.	Low-Inlet Transonic/Supersonic Airfoil W/ Jacket
22115-61J	10346_257	8/22/2003	8871688	2/22/2005	FTT Inc.	Tailored Abatement Mechanism For Compressor Airfoil
22115-61J	10346_338	10/14/2003	7_174_797	2/13/2007	FTT Inc.	High Temperature & Pressure Testing Facility
EP7083	PCTUS20110571950	10/26/2011	EP2653196		FTT Inc.	Large Floating Vertical Axis Wind Turbine
EP7102	PCTUS2012020231 Invent PT2012EP03631689A	5/27/2013			FTT Inc.	Apparatus For Testing An Industrial Gas Turbine
F1604R	13067_704	1/17/2011	8478121	7/2/2013	FTT Inc.	Ring Segment For Industrial Gas Turbine
F1608R	13022_779	6/22/2010	9478122	7/2/2013	FTT Inc.	Boas With Circumferentially Cooled Teeth
F1608R	13022_775	6/23/2010	9473997	12/24/2013	FTT Inc.	Turbine Blade With Trailing Edge Coating
F1611R	13049_371	11/17/2009	8777588	7/16/2014	FTT Inc.	Turbine Vane With Impingement Cooling Inlet
F1613R	13102_975	8/02/2010	9045180	10/13/2013	FTT Inc.	Turbine Blade With Showerhead Film Cooling Holes
F1617R	13123_655	9/28/2011	8940437	2/4/2014	FTT Inc.	Mini Sized Combined Cycle Power Plant
F1619R	13042_676	4/13/2010	8432048	4/30/2013	FTT Inc.	Hybrid Engine With A Gas Turbine Engine
F1620R	13087_633	7/21/2010	8582355	3/19/2013	FTT Inc.	High Response Air Angle Probe
F1622R	13083_043	4/25/2011			FTT Inc.	Process For Machining A Fluid Film Beading Using CMT
F1623R	13052_319	2/24/2011	8622296	1/21/2014	FTT Inc.	Turbine Vane With Endwall Cooling
F1626R	13070_998	11/22/2010	8689707	12/9/2013	FTT Inc.	Process For Analyzing A Labyrinth Seal For Failure
F1631R	13026_426	12/30/2009	8230653	8/28/2012	FTT Inc.	Hybrid Propeller Rocket Engine
F1635R	13115_038	8/17/2010	8737681	6/24/2014	FTT Inc.	Industrial Turbine Stator Vane
F1638R	13086_800	4/12/2011	8897488	1/19/2014	FTT Inc.	Power Plant For Use
F1639R	13188_075	3/21/2011	8628296	1/14/2014	FTT Inc.	Turbine Rotor Blade With Serpentine Cooling
F1642R	13278_752	7/18/2013	9788945	4/28/2014	FTT Inc.	Turbine Blade With Multi-Vortex Tip Cooling Channels
F1649R	13113_020	8/12/2011	8670924	10/28/2014	FTT Inc.	Industrial Turbine Stator Vane
F1650R	13025_856	9/8/2011	8884443	10/21/2014	FTT Inc.	Rocket Engine Testpump
F1669R	13067_476	4/7/2010	8291810	8/11/2012	FTT Inc.	Turbine Airfoil Ceramic Core With Strain Relief Slot
F1106R	13048_946	1/28/2012	8894487	10/21/2014	FTT Inc.	Turbine Blade Serpentine Flow Cooling
F1108R	13173_380	5/18/2010	8371178	2/12/2013	FTT Inc.	Turbopump With Torque Sensor
F1114R	13040_404	2/20/2012	8951848	10/7/2014	FTT Inc.	Turbine Blade With Showerhead Film Cooling Slots
F1118R	13041_850	8/14/2008	8322886	12/4/2012	FTT Inc.	Air Cooled Turbine Airfoil With Sequential Impingement Cooling
F1127R	13244_987	1/26/2011	8641362	2/4/2014	FTT Inc.	Turbine Exhaust Cylinder And Shaft Cooling
F1128R	14033_226	11/20/2014	1068947	5/22/2017	FTT Inc.	Multiple Wall Impingement Plate For Sequential Impingement Cooling Of An Extruded
F1126R	13251_848	10/30/2011	8914288	9/30/2014	FTT Inc.	Variable Bypass Ratio Augmented Gas Turbine Engine
F1134R	13456_342	4/27/2012	8878475	1/14/2014	FTT Inc.	Turbine Blade With Radial Cooling Passage Having Continuous Discrete Turbulence Mixers
F1136CP	13206_378	2/18/2009	8197537	5/1/2012	FTT Inc.	Air Cooled Turbine Airfoil With Sequential Impingement Cooling
F1143R	13061_804	11/18/2011	8734108	8/27/2014	FTT Inc.	Turbine Blade With Impingement Cooling Cavities And Platform Cooling Channels Connected In Series
F1146R	13097_318	5/21/2011	8758811	8/24/2014	FTT Inc.	Turbine Exhaust Cylinder Cooling With Heat Shield
F1150R	13018_489	12/10/2011	8777571	7/16/2014	FTT Inc.	Turbine Airfoil With Canted Diffusion Flow Cooling Slot
F1152R	13018_820	3/22/2012	8413458	4/9/2013	FTT Inc.	Method For Debating A Defect On An Operating Turbine Rotor Blade
F1156R	13036_714	11/26/2012	8878788	3/25/2014	FTT Inc.	Turbine Blade With Near Wall Cooling Channels
F1157R	13036_728	9/29/2012	8900403	8/8/2013	FTT Inc.	Turbine Blade With Counter Flowing Near Wall Cooling Channels
F1164P2 POF					FTT Inc.	Core Combustor Test Facility
F1167R	13086_801	10/20/2010	8598578	10/19/2013	FTT Inc.	Spring Loaded Compliant Seal For High Temperature Use
F1168R	13477_280	3/22/2012	9228437	1/12/2016	FTT Inc.	Turbine Airfoil With Pressure Side Trailing Edge Cooling Slots
F1188R	13412_880	3/8/2012	9174426	11/3/2015	FTT Inc.	Shrouded Centrifugal Impeller For High Speed Use
F1171R	131427_277	10/27/2010	8414265	4/6/2013	FTT Inc.	Turbine Stator Vane With Near Wall Integrated Micro Cooling Channels
F1176C	15096_264	3/5/2016			FTT Inc.	Liquid Rocket Engine With Mercedes Cooling
F1186R	13815_662	3/15/2013	8994828	7/18/2016	FTT Inc.	Circulating Fluidized Bed Cooling For An Industrial Gas Turbine Engine
F1201CP	14011_211	10/10/2014	8911746	4/4/2017	FTT Inc.	Sequential Cooling Inlet For Turbine Stator Vane
F1201D	14176_728	2/19/2014	8976684	1/14/2014	FTT Inc.	Sequential Cooling Inlet For Turbine Stator Vane
F1201R	13688_083	5/18/2011	8564828	4/12/2014	FTT Inc.	Sequential Cooling Inlet For Turbine Stator Vane
F1211C	15080_259	5/3/2017			FTT Inc.	Rim Seal For A Turbine
F1211C PCT					FTT Inc.	Rim Seal For A Turbine

F1215R	43972,968	8/13/2012	8006587	12/1/2015	FTT Inc.	Extendable Nozzle For Rocket Engine
F1215R	43925,261	5/22/2012	8006405	8/8/2013	FTT Inc.	Industrial Stator Vane With Sequential Impingement Cooling Inserts
F1222C	18192,827	8/14/2018			FTT Inc.	Ram Air Turbine For High Mach Flight Speed Aircraft
F1222R	13622,463	8/18/2012			FTT Inc.	Ram Air Turbine For High Mach Flight Speed Aircraft
F1230CIP	14450,044	8/4/2014	8552827	5/31/2015	FTT Inc.	Gas Turbine Engine With Liquid Metal Cooling
F1230CIP PCT					FTT Inc.	Gas Turbine Engine With Liquid Metal Cooling
F1235P PCT					FTT Inc.	Gas Turbine Engine With Liquid Metal Cooling
F1235R	64955,962	10/16/2013	8788377	7/28/2014	FTT Inc.	Gas Turbine Engine With Liquid Metal Cooling
F1235R PCT					FTT Inc.	Gas Turbine Engine With Liquid Metal Cooling
F1235R	13952,508	10/16/2012	8891587	11/11/2014	FTT Inc.	Method For Testing Variable Cooling Geometries In A Turbine Vane
F1238R	13684,489	10/31/2012	9264159	12/1/2015	FTT Inc.	IR Detection Of Small Cracks During Fatigue Testing
F1240R	13687,000	11/28/2012	9467932	8/22/2015	FTT Inc.	Turbine Rotor Blade With Tip Cooling
F1247H	13881,848	11/20/2012	9108491	8/18/2015	FTT Inc.	Turbine Blade With Micro Sized Near Wall Cooling Channels
F1257D2	15226,057	7/1/2016	9884798	3/28/2017	FTT Inc.	Process For Testing A Compressor Or A Combustor Of A Gas Turbine Engine Using A Large Compressed Air Storage Reservoir
F1257D3	15226,102	7/1/2016	9854181	5/18/2017	FTT Inc.	Process For Testing A Compressor Or A Combustor Of A Gas Turbine Engine Using A Large Compressed Air Storage Reservoir
F1257D4	15226,125	7/1/2016	9850584	11/22/2016	FTT Inc.	Process For Testing A Compressor Or A Combustor Of A Gas Turbine Engine Using A Large Compressed Air Storage Reservoir
F1257R	14934,218	11/8/2015	9410888	8/8/2016	FTT Inc.	Process For Testing A Compressor Or A Combustor Of A Gas Turbine Engine Using A Large Compressed Air Storage Reservoir
F1268C	18125,515	10/10/2018			FTT Inc.	Gas Turbine Engine Component With Wireless Micro Sensors
F1287R	13792,883	3/11/2015	9175826	11/3/2015	FTT Inc.	Split Ring Floating Air Riding Seal For A Turbine
F1270R	14101,701	12/10/2013	9421935	8/22/2016	FTT Inc.	Process For Forming An Air Cooled Turbine Airfoil
F1272R	14036,102	8/18/2013	9880954	11/22/2016	FTT Inc.	Turbine With Radial Acting Seal
F1283R	14955,354	10/26/2013	9416674	8/16/2016	FTT Inc.	Finishing Air Riding Seal For A Turbine
F1285R PCT					FTT Inc.	Rim Seal For A Split Case Turbine
F1300C	15246,803	8/25/2016			FTT Inc.	Airborne High Power Density Turbo-Alternator
F1301CIP	15704,345	8/14/2017			FTT Inc.	Laser Gun With A Turbine Driven Generator
F1302R	15810,702	8/1/2017			FTT Inc.	Floating Air Seal With Robustness Magnet For A Turbine
F1304 PCT					FTT Inc.	Gas Turbine Engine With Turbine Cooling And Combustor Air Preheating
F1309P PCT					FTT Inc.	High Pressure Ratio Two Speed Industrial Gas Turbine Engine
F1310R	14512,076	10/10/2016	9870151	11/7/2017	FTT Inc.	Turbine Last Stage Rotor Blade With Forced Driven Cooling Air
F1310R PCT					FTT Inc.	Turbine Last Stage Rotor Blade With Forced Driven Cooling Air
F1315R	14245,128	4/4/2014	9540952	1/10/2017	FTT Inc.	Turbocharger With Oil-Free Hydrostatic Bearing
F1315R PCT					FTT Inc.	Turbocharger With Oil-Free Hydrostatic Bearing
F1317R	14534,489	11/4/2014	9511725	4/4/2017	FTT Inc.	Turbine Stator Vane With Insert And Flexible Seal
F1317R PCT					FTT Inc.	Turbine Stator Vane With Insert And Flexible Seal
F1318RTC	15870,417	5/3/2016			FTT Inc.	Turbine Airfoil With Leading Edge Cooling Circuit
F1321R	15143,656	5/22/2016	10024190	7/17/2018	FTT Inc.	Apparatus And Process For Forming An Air Cooled Turbine Airfoil With A Cooling Air Channel And Discharge Slot In A Thin Wall
F1326R	14746,317	8/18/2015	9732622	8/15/2017	FTT Inc.	Self-Balancing Air Riding Seal For A Turbine
F1335R	14165,555	1/24/2014	8894488	10/21/2014	FTT Inc.	Turbine Rotor Blade With Super Cooling
F1334R	14736,528	8/15/2015	9771821	3/28/2017	FTT Inc.	Turbine Interstage Seal With Self-Balancing Capability
F1336R	14738,088	7/8/2015	9584798	7/18/2016	FTT Inc.	Air Riding Seal For A Turbine
F1344C	15704,683	8/14/2017	10022293	8/25/2018	FTT Inc.	Advanced Lean Burn Injector Igniter System
F1344R	14814,215	2/4/2015	9822977	11/21/2017	FTT Inc.	Advanced Lean Burn Injector Igniter System
F1344R PCT					FTT Inc.	Advanced Lean Burn Injector Igniter System
F1346C	15267,868	12/2/2013			FTT Inc.	Small Turbine Stator Vane With Impingement Cooling Insert
F1348R	14291,518	5/30/2014	8591628	2/28/2017	FTT Inc.	Small Turbine Stator Vane With Impingement Cooling Insert
F1358R	14925,507	2/18/2015	8788458	7/18/2017	FTT Inc.	Sensor For Detecting Hydrate Formation In A Static, Clean Line
F1381R	18138,429	10/10/2018			FTT Inc.	Apparatus And Process For Installing Instrumentation On Thin-Wall Materials
F1387CIP	15582,322	5/11/2017			FTT Inc.	Superconducting Electric Boost Pump For Nuclear Thermal Propulsion
F1371R	14882,393	10/14/2015			FTT Inc.	Apparatus And Process For Automatically Detecting A Defect In A Sonic Interfered Inspection Data
F1375R	14549,492	11/20/2014	9732921	8/15/2017	FTT Inc.	Air Riding Seal With Purge Cavities
F1385R	15235,486	10/27/2018			FTT Inc.	High Temperature Air Cooled Sensor For Turbine Exhaust
F1381R	14967,848	1/28/2015	10054995	8/21/2018	FTT Inc.	Turbocharger With Oil-Free Hydrostatic Bearing
F1381R PCT					FTT Inc.	Turbocharger With Oil-Free Hydrostatic Bearing
F1382R	14548,388	11/20/2014	9684072	5/8/2018	FTT Inc.	Liquid Rocket Engine With Hybrid Electric Motor Driven Pump
F1383C2	15691,801	2/8/2018			FTT Inc.	Integrally Bladed Rotor With Cooling Circuit Having Dirt Separation Features
F1388H	14854,119	8/15/2015	10191211	12/11/2018	FTT Inc.	Apparatus And Process For Converting An Aero Gas Turbine Engine Into An Industrial Gas Turbine Engine For Electric Power Production
F1388R PCT					FTT Inc.	Apparatus And Process For Converting An Aero Gas Turbine Engine Into An Industrial Gas Turbine Engine For Electric Power Production

F1386R	15156,946	5/22/2019			FTT Inc.	Small Gas Turbine Engine With Heat Pipe Cooled Bearing
F1381R	15227,176	6/3/2016			FTT Inc.	Two Stage Axial Flow Compressor For Low Emissions
F1382R	15052,292	4/8/2016			FTT Inc.	High Pressure Ratio Twin Spool Industrial Gas Turbine Engine With Dual Flow Compressor
F1382R PCT					FTT Inc.	High Pressure Ratio Twin Spool Industrial Gas Turbine Engine With Dual Flow Compressor
F1383H	15087,579	3/11/2016			FTT Inc.	Air Holding Seal Spring System For Small Diameters
F1384H	15283,497	6/13/2016			FTT Inc.	Low Swirl Burner With Liquid Fuel Injection
F1385A	15278,106	6/28/2016			FTT Inc.	Low Swirl Burner With Radial Inlets
F1386C	15386,972	2/12/2016			FTT Inc.	Powder Seed Fusion Of Gamma-Phase Precipitation Hardened Alloys
F1386R	15146,056	5/4/2016			FTT Inc.	High Pressure Compressor Diffuser For An Industrial Gas Turbine Engine
F1406R	15131,110	4/18/2019			FTT Inc.	Turbine Rotor Cooling Air Stable Collectors
F1401R	15137,280	4/25/2016			FTT Inc.	Low Pressure Compressor Diffuser And Cooling Flow Bleed For An Industrial Gas Turbine Engine
F1402H	15173,773	8/8/2019			FTT Inc.	Apparatus And Process For Manufacturing A Centrifugal Pump With A Rotor Within A Single Piece Housing
F1409R	14825,819	7/22/2015	1006293	8/28/2018	FTT Inc.	Apparatus And Process For Refining Features In An Additive Manufactured Part
F1409R PCT					FTT Inc.	Apparatus And Process For Refining Features In An Additive Manufactured Part
F1409R	15137,268	4/25/2016			FTT Inc.	Twin Spool Industrial Gas Turbine Engine With Variable Inlet Guide Vanes
F1409R PCT					FTT Inc.	Twin Spool Industrial Gas Turbine Engine With Variable Inlet Guide Vanes
F1414R	15074,158	3/18/2016			FTT Inc.	Single Stage Twin Steam Compressor
F1419D	16164,308	8/17/2016			FTT Inc.	Process For Repairing A Worn Carbide-Coated Steel Surface Of A Sprag Clutch
F1419H	15288,672	10/31/2016	10023768	8/21/2019	FTT Inc.	Process For Repairing A Worn Carbide-Coated Steel Surface Of A Sprag Clutch
F1425C	16155,811	10/10/2018			FTT Inc.	Apparatus And Process For Forming A Composite Spine And Shell Turbine Rotor Blade
F1426R	15174,051	6/8/2016			FTT Inc.	Variable Low Turbine Vane With Air Rotation Axis
F1426R PCT					FTT Inc.	Variable Low Turbine Vane With Air Rotation Axis
F1426R	15006,946	1/29/2019	9596550	11/29/2016	FTT Inc.	Turbine Rotor Blade Of The Spine And Shell Construction
F1432R	14994,469	1/6/2016	9943281	9/9/2017	FTT Inc.	Process Of Forming A Metal Part From A Metal Powder Using A Laser To Melt The Metal Powder Over A Support Surface That Can Be Easily Removed After The Metal Part Has Been Formed
F1433R	15255,210	8/9/2016			FTT Inc.	Turbine Stator Vane With Closed-Loop Sequential Impingement Cooling Inlet
F1433R PCT					FTT Inc.	Turbine Stator Vane With Closed-Loop Sequential Impingement Cooling Inlet
F1434H	15270,017	12/8/2016			FTT Inc.	Compressor Rotor Blade With Blade Tip Vortex Generator
F1435H	15283,499	6/13/2016			FTT Inc.	Hybrid Hydrostatic Magnetic Bearing For Pump Applications
F1439R	15053,008	2/26/2016			FTT Inc.	Apparatus And Process For Determining A Convective Heat Transfer Coefficient Between A Moving Fluid And A Bounding Surface
F1438R	15227,091	6/3/2016			FTT Inc.	Turbopump With A Single Piece Housing And A Smooth Enamel Glass Surface
F1438R PCT					FTT Inc.	Turbopump With A Single Piece Housing And A Smooth Enamel Glass Surface
F1442R	16190,228	8/23/2016	9826678	11/29/2017	FTT Inc.	Apparatus And Process For Removing Support Structures From A 3D Printed Part
F1442R PCT					FTT Inc.	Apparatus And Process For Removing Support Structures From A 3D Printed Part
F1443P PCT					FTT Inc.	Industrial Gas Turbine Engine With High Pressure Cooling Air Delivery Through The Compressor
F1444P PCT					FTT Inc.	High Pressure Cooling Air Return Ducting For Turbine Thrust Balance
F1445R	15103,497	1/13/2017			FTT Inc.	Turbine Stator Vane With Multiple Oil Pressure Feeds
F1445R PCT					FTT Inc.	Turbine Stator Vane With Multiple Oil Pressure Feeds
F1446R PCT					FTT Inc.	Blade Outer Air Seal With Coated Non-Symmetric Curved Teeth
F1447P PCT					FTT Inc.	Industrial Gas Turbine Engine With Thrust Balance And Leak Management Between A Generator And The Compressor
F1448R	15190,352	11/10/2016			FTT Inc.	Cooled Compressor Case With Over-Pressurized Cooling Air
F1448R PCT					FTT Inc.	Cooled Compressor Case With Over-Pressurized Cooling Air
F1489P PCT					FTT Inc.	Self-Supporting Rotor Disk With Staggered And Angled Cooling Supply Holes
F1451P PCT					FTT Inc.	Turbine Rotor PadDED Mini-Disk And Multi-Blade Cooling Supply
F1452P PCT					FTT Inc.	Gas Turbine Rotor Semi-Closed Loop Cooling Rotor
F1455R	15157,268	5/17/2019			FTT Inc.	Process For Retrofitting An Industrial Gas Turbine Engine For Increased Power And Efficiency
F1455R PCT					FTT Inc.	Process For Retrofitting An Industrial Gas Turbine Engine For Increased Power And Efficiency
F1457R	15435,352	2/15/2017			FTT Inc.	Turbine Airfoil With Thin Leading Edge Cooling Circuit
F1458H	15131,609	4/18/2016			FTT Inc.	Industrial Gas Turbine Engine With Turbine Jetair Cooling
F1458H PCT					FTT Inc.	Industrial Gas Turbine Engine With Turbine Jetair Cooling
F1481HA	15248,572	4/26/2016			FTT Inc.	Process For Joining Bodies Connected By Additive Manufactured Support Structure Through The Use Of High Ultrasound
F1452R	15286,755	1/5/2017			FTT Inc.	Apparatus And Process For Re-Using A Retired Main-Shaft Gas Turbine Engine That Is Ready For Overhaul For An Unseen-Rated Mission
F1484R	15444,374	2/28/2017			FTT Inc.	Twin Spool Industrial Gas Turbine Engine Low Pressure Compressor With Diffuser
F1484R PCT					FTT Inc.	Twin Spool Industrial Gas Turbine Engine Low Pressure Compressor With Diffuser
F1486R	15286,227	8/20/2016			FTT Inc.	Air Cooled Turbine Rotor Blade For Closed Loop Cooling
F1486R PCT					FTT Inc.	Air Cooled Turbine Rotor Blade For Closed Loop Cooling
F1487H	15180,122	8/9/2017			FTT Inc.	Power Plant For Unmanned Aerial Vehicle
F1488H	15180,822	5/23/2017	9653335	1/9/2018	FTT Inc.	Aircraft With Gas Turbine Engine Having Outer Bypass Elements Removed

F1476R	45216,966	7/22/2019	8897413	2/20/2018	FTT Inc.	Process For Launching A Cruise Missile From An Aircraft
F1471R	45205,905	7/7/2016	10024470	7/17/2018	FTT Inc.	Integrally Bladed Rotor With Bore Entry Cooling Holes
F1473R	15395,344	5/12/2017			FTT Inc.	Robber Bell Assembly For Fuel Injectors
F1475R	15375,799	12/12/2016			FTT Inc.	Multiple Stage Pressure Balanced Hypersonic Heater
F1477H	15365,470	5/24/2017	10031648	7/24/2018	FTT Inc.	High Temperature High Pressure Non-Vitiated Heater
F1478R	15152,481	10/15/2016			FTT Inc.	Integrated Vaporizer Combustor
F1479R	15147,347	10/27/2017			FTT Inc.	Apparatus And Process Of Forming A Thin Walled Additive Manufactured Heat Exchanger
F1476R PCT					FTT Inc.	Apparatus And Process Of Forming A Thin Walled Additive Manufactured Heat Exchanger
F1484R	151421,751	2/1/2017			FTT Inc.	Small Gas Turbine Engine Mounted Within A Single-Phase Recuperator
F1485R	151405,151	1/17/2017			FTT Inc.	Small Gas Turbine Engine With Cooled Fan And Impeller
F1488P PCT					FTT Inc.	Apparatus And Process For Testing A Large Combustor Using A Creep Facility
F1488H	151429,212	2/10/2017			FTT Inc.	Turbocharger With Air Journal Bearing And Air Thrust Bearing
F1488P PCT					FTT Inc.	Turbocharged Gas Turbine Engine With Electric Power Generation For Small Aircraft Electric Propulsion
F1481R	151311,097	8/18/2018			FTT Inc.	Integrally Bladed Rotor With Cooling Channels
F1486R	151297,216	5/17/2017	9826988	3/27/2018	FTT Inc.	Gas Turbine Engine With Axial Flow Fan With Twin Stages Impeller And Variable Area Bypass Nozzle
F1484R	151285,718	2/13/2019			FTT Inc.	Directed Energy Weapon With Cooling
F1485R	151262,308	5/28/2017			FTT Inc.	Apparatus And Process For Testing An Aero Vehicle At High Mach Number
F1487R	151472,389	3/28/2017			FTT Inc.	Interlocking Axial Labyrinth Seal
F1488P PCT	151265,685	10/18/2018			FTT Inc.	Wear Resistant Coating To Protect Environmental Coating On A Refractory Alloy Turbine Hub Shroud Edge And Wear Resistant Coatings For Refractory Materials
F1500C	151265,554	10/18/2018			FTT Inc.	Additive Manufactured Film Cooling Hole
F1501H		5/24/2017			FTT Inc.	Gas Turbine Engine With Axial Thrust Balance
F1502R	151215,559	9/7/2017	9891768	6/5/2018	FTT Inc.	Gas Turbine Engine With Multiple Electric Generators
F1504R	151215,387	8/22/2018			FTT Inc.	Additively Manufactured Disk With Optimized Microstructure For Small Turbine Engines
F1506R	151205,305	10/20/2017			FTT Inc.	Axial Positioning And Axial Thrust Management Of A Rotor Using Magnetic Force Without An Axial Bearing
F1510R	151246,067	4/9/2018			FTT Inc.	Ramjet Engine With A Low Pressure Compressor
F1512R	151227,381	7/4/2018			FTT Inc.	Integrated Start/Generator For Small Gas Turbine Engine Using Dual Helicoid Axial On A Compressor
F1513H	151228,689	3/22/2016			FTT Inc.	Generator Cooling Impeller And Bearing/Rotor Cooling
F1514H	151228,500	3/22/2018			FTT Inc.	Turbine Secondary Air System And Thrust Management System
F1515R	151229,505	3/22/2018			FTT Inc.	Power Plant For A UAV With Geosensing Contact On Generator
F1516R	151135,446	5/22/2018			FTT Inc.	Fuel Nozzle Assembly With Heatshield
F1518R	151228,558	3/22/2019			FTT Inc.	Apparatus And Process For Rapid Deceleration Of Rotor Of Gas Turbine Engine To Reduce Wear On Bearings
F1519R	151228,538	3/22/2019			FTT Inc.	Apparatus And Process For Detecting Load Dump Or Mechanical Load Coupling Failure Of A Gas Turbine Driven Electric Generator
F1520R	151228,543	3/22/2016			FTT Inc.	Apparatus And Process For Optimizing Turbine Engine Performance Via Load Control Through A Fewer Control Modules
F1522H	151248,775	7/30/2016			FTT Inc.	Cost Integrally Bladed Rotor With Bore Entry Cooling
F1522H	62047,134	3/23/2016			FTT Inc.	Magnetic Gearbox With Air Film Bearings
F1522R	151232,134	7/11/2018			FTT Inc.	Magnetic Gearbox With Air Film Bearings
F1524R	151216,252	7/18/2018			FTT Inc.	Apparatus And Process Of Forming An Integrally Bladed Rotor With Coated Single Crystal Blades And An Exhaust Nozzle Gasket
F1525R	151215,503	5/18/2018			FTT Inc.	General Turboshaft Aero Gas Turbine Engine With Solid Bore Turbine Disk
F1526R	151215,008	5/18/2018			FTT Inc.	Flexible Sun Gear Shaft For Compact Epicyclic Geared Turboshaft
F1527R	151216,078	7/18/2018			FTT Inc.	Small Turbine Engine Rotary Disk Fuel Nozzle With Active Thermal Protection Optimized For Additive Manufacturing
F1528H	151207,004	5/11/2018			FTT Inc.	Gas Turbine Engine Fan Stage With Bearing Cooling
F1529H	151209,181	7/8/2018			FTT Inc.	Integrally Bladed Rotor Turbine With Serpentine Flow Cooling Passages Formed By A Metal Additive Manufacturing Process
F1531R	151232,182	7/11/2018			FTT Inc.	Apparatus And Process For Forming A Film Cooling Hole In A Metal Additive Manufactured Turbine Airfoil
F1532R	151252,951	8/22/2016			FTT Inc.	Variable Pitch Fan For Gas Turbine Engine
F1535P	120947,261	5/4/2016			FTT Inc.	Combustion System For Dual Mode Turbo-Ramjet Propulsion Unit
F1535R	151112,382	9/19/2018			FTT Inc.	Combustion System For Dual-Mode Turbo-Ramjet Propulsion Unit
F1534R	151027,349	7/4/2018			FTT Inc.	Gas Turbine Engine With Active Clearance Control
F1536R	151014,322	6/21/2018			FTT Inc.	Process Of Forming A Metal Additive Manufactured Part With A Smooth Surface
F1538P	621676,585	5/25/2016			FTT Inc.	Gas Turbine Engine With Afterburner In Bypass Outlet
F1537H	621889,273	6/25/2018			FTT Inc.	Gas Turbine Engine With Thrust Augmentation Using Water Injected Into Turbine Cooling Air
F1536P	621684,816	8/22/2018			FTT Inc.	Ceramic Radial Turbine
F1536P	621684,846	8/22/2018			FTT Inc.	Axial Thrust Fan Air Bearing With Thrust Sensor
F1545R					FTT Inc.	Turbine Airfoil With Trailing Edge Cooling Circuit
F1581P	617734,284	8/21/2016			FTT Inc.	Adjustable Flow Coating Treatment
F1588P		11/15/2016			FTT Inc.	Dimple Jet Airfoil With Pressure Surface Boundary Layer Ingestion
F668R	121588,389	6/11/2008	9068796	1/17/2012	FTT Inc.	Turbine Blade With Trailing Edge Impingement Cooling
F616R	121573,133	6/21/2007	7658777	8/14/2011	FTT Inc.	Thermal Mechanical Fatigue Test Rig

F628R	12045,342	2402009	8094787	11172012	FTT Inc.	Turbine Blade With Serpentine Cooled Tip Shroud
F648R	12048,902	8172009	8118554	20120012	FTT Inc.	Turbine Vane With Endwall Coating
F658R	12051,824	2403008	8098788	11172012	FTT Inc.	Air Cooled Turbine Airfoil With Sequential Coating
F661R	12062,244	71202010	8312475	11072012	FTT Inc.	Turbine Airfoil With Nano Coating Channels
F663R	12068,007	82620010	8168812	5102012	FTT Inc.	Electrode For Shaped Film Cooling Hole
F664R	12069,199	42320010	8587156	120252012	FTT Inc.	Turbine Blade With A Tip Cap
F665R	02076,304	110252008	8261880	80282012	FTT Inc.	Turbine Airfoil With Near Wall Vortex Coating
F687R	02016,458	1902006	8087683	1032012	FTT Inc.	Turbine Blade With Showerhead Film Cooling Holes
F698R	120421,154	4422006	8018584	91132011	FTT Inc.	Turbine Blade With Leading Edge Impingement Coating
F699R	120425,874	8222009	8118547	20120012	FTT Inc.	Turbine Inter-Stage Gap Cooling Arrangement
F699R	120488,986	7030009	8261330	70312012	FTT Inc.	Turbine Blade With Film Cooling Slots
F699R	120488,910	6152008	8063406	120272011	FTT Inc.	High Temperature Bearing With Lubricant
F699R	120500,033	3262011	8281350	70812012	FTT Inc.	Turbine Rotor Blade
F699R	020416,022	30442011	8888986	120282012	FTT Inc.	Turbine Vane With Oil Separator
F699R	020416,036	3182008	8142158	30752012	FTT Inc.	Turbine Vane With Oil Separator
F699R	120416,488	4202009	8070443	12082011	FTT Inc.	Turbine Blade With Leading Edge Coating
F699R	120416,575	110222008	8025482	9072011	FTT Inc.	Turbine Blade With Dual Serpentine Cooling
F699R	120428,340	10182007	8011888	9082011	FTT Inc.	Turbine Blade With Serpentine Cooling
F701R	120500,627	6182008	8182006	6052012	FTT Inc.	Air Bearing
F704R	120708,371	8172008	8547934	102010	FTT Inc.	Combined Cycle Power Plant
F708R	120605,346	3402009	8282582	100282012	FTT Inc.	Turbine Blade With Serpentine Flow Cooling
F709R	120486,076	110222008	8083488	120272011	FTT Inc.	Turbine Blade With Cooling Flow Modulation
F709R	120408,026	8072008	7997588	60282011	FTT Inc.	Low Cooling Flow Turbine Blade
F710R	120486,988	70202007	8070488	12082011	FTT Inc.	Split Ring Wedge Bearing Design
F713R	120717,387	10232009	7998031	3152011	FTT Inc.	Process For Measuring A Part
F718R	120582,194	71220010	8388370	3182013	FTT Inc.	Turbine Blade With Multi-impingement Cooling
F719R	120582,057	11820010	8317473	110272012	FTT Inc.	Turbine Blade With Leading Edge Coating
F719R	120582,394	100222008	8388306	120282012	FTT Inc.	Process For Forming A High Temperature Turbine Rotor Blade
F719R	120428,742	10282008	8007587	80382011	FTT Inc.	High Temperature Turbine Rotor Blade
F721C	120448,355	70212010	8382488	20282013	FTT Inc.	Process Of Forming A High Temperature Turbine Rotor Blade
F721R	120416,488	7072011	8092381	10082011	FTT Inc.	High Temperature Turbine Rotor Blade
F722R	120464,048	4082008	8081980	110222011	FTT Inc.	Turbine Rotor Blade With Low Cooling Flow (Lot Of 13)
F728C	120283,885	8182008	8152488	4182012	FTT Inc.	Floating Air Seal For A Turbine
F728R	120418,288	12182008	8068473	110262011	FTT Inc.	Floating Air Seal For A Turbine
F728R	120731,826	110222010	8071908	80282013	FTT Inc.	Multiple Piece Turbine Rotor Blade
F730R	120436,544	100212010	8388382	2082013	FTT Inc.	Compressed Air Cooled Turbine Rotor Blade
F731R	120886,288	3082010	8444588	5012013	FTT Inc.	Turbine Blade With Multiple Near Wall Serpentine Flow Cooling
F732R	120426,346	12182008	8070488	12082011	FTT Inc.	High Temperature Turbine Rotor Blade
F737R	120470,984	50282006	8138358	30282012	FTT Inc.	Heat Reservoir For A Power Plant
F742R	120488,918	12182008	8068485	110262011	FTT Inc.	Turbine Blade Tip Section Coating
F744R	120488,914	60232008	8100954	10042012	FTT Inc.	Turbine Blade With Impingement Cooling
F751R	120487,008	8182008	7824190	11022010	FTT Inc.	Multiple Piece Turbine Airfoil
F753R	120486,346	8182008	7828518	11082010	FTT Inc.	Multiple Piece Turbine Airfoil
F771R	120486,178	7082006	8186683	50282012	FTT Inc.	Multiple Piece Turbine Blade
F773R	120682,008	80242011	8382481	20282013	FTT Inc.	Turbine Rotor Blade
F774R	120886,182	8082008	8388738	10282013	FTT Inc.	Turbine Blade With Customized Cooling Channels
F778R	120628,107	6172008	8272844	90282012	FTT Inc.	Floating End Seal
F782R	120544,878	3222011	8282334	10102012	FTT Inc.	Turbine Inter-Segment Mate-Face Coating Design
F783R	120888,577	3182010	8454310	6042018	FTT Inc.	Compressor Blade With Tip Sealing
F784R	120611,028	12172008	8182221	50222012	FTT Inc.	Turbine Blade With Tip Sealing And Coating
F795R	120528,688	9032009	8017472	110272012	FTT Inc.	Large Twisted Turbine Rotor Blade
F795R	120441,188	8102011	8333644	12182012	FTT Inc.	Cent Seal For A Turbine
F798R	120682,048	4152011	8398858	3122013	FTT Inc.	Cent Seal For A Turbine
F798R	120886,888	8172008	8152816	3182012	FTT Inc.	Cent Seal For A Turbine
F798R	120671,571	10102010	8272846	90282012	FTT Inc.	Process For Sliding A Throat Length Of A Jet Pump
F800R	120671,579	7082008	8222037	7172012	FTT Inc.	Process To Detect Two-Phase Flow In A Centrifugal
F800R	120543,796	1182010	8152482	4182012	FTT Inc.	Good Seal With Conical Flexible Seal

F007R	12016,374	11-17-2008	8790083	7-28-2014	FTT Inc.	Turbine Airfoil With Trailing Edge Cooling
F008R	12067,264	4-28-2010	8197211	6-12-2012	FTT Inc.	Compressible Air Cooled Turbine Rotor Blade
F009R	12766,240	3-14-2008	8512880	8-27-2013	FTT Inc.	Turbine Blade With Platform Cooling
F010R	12766,248	2-18-2010	8342802	1-12-2015	FTT Inc.	Twin Turbine Blade With Near Wall Cooling
F011R	12582,313	1-18-2010	8458826	5-14-2013	FTT Inc.	Turbine Blade Outer Air Seal
F024R	12788,879	7-22-2010	8281934	8-18-2012	FTT Inc.	Turbine Vane Mate Face Seal Assembly
F028R	12627,885	1-17-2011	8613189	12-14-2013	FTT Inc.	Centrifugal Impeller For Rocket Engine Having High And Low Pressure Outlets
F029R	12626,465	7-2-2012	8678764	3-25-2014	FTT Inc.	Tip Cap For Turbine Rotor Blade
F035R	12915,305	1-15-2009	7750482	7-8-2010	FTT Inc.	Seamless Floating Wind Turbine
F037R	12954,478	8-15-2012	8858678	10-19-2013	FTT Inc.	Cooled Ibr For A Micro-Turbine
F055R	13683,285	1-25-2010	8312474	11-27-2012	FTT Inc.	Turbine Blade With Near Wall Cooling
F058R	13683,314	10-28-2009	8251858	8-28-2012	FTT Inc.	Tip Cap For Turbine Rotor Blade
F066R	12725,787		8887943	8-18-2014	FTT Inc.	Turbine Blade With Trailing Edge Cooling Circuit
F080C	13758,808	4-28-2012	8481710	8-11-2013	FTT Inc.	High Speed Industrial Gas Turbine Engine With Co-Rotating Generator For High Speed
F087R	12689,488	11-11-2011	8157507	4-17-2012	FTT Inc.	Compress Stator Assembly
F088R	12705,241	2-18-2010	8384735	7-18-2018	FTT Inc.	Multiple Piece Turbine Rotor Blade
F093R	12700,837	12-12-2011	8497281	4-2-2013	FTT Inc.	Johnson Scorton Cycle Rocket Engines
F097R	12708,121	1-21-2011	8438204	9-7-2013	FTT Inc.	Turbine Blade With Tip Seal Cooling
F098R	12728,527	7-2-2012	8481254	7-23-2013	FTT Inc.	Turbine Blade With Trailing Edge Cooling
F082R	12758,815	11-22-2010	8555285	11-16-2013	FTT Inc.	Turbine Blade With Triple Pass Serpentine Cooling
F083R	12728,458	4-12-2012	8468933	8-11-2013	FTT Inc.	Turbine Vane With Exhaust Cooling
F084R	12748,558	12-1-2010	8444388	5-21-2013	FTT Inc.	Multiple Piece Turbine Rotor Blade
F085C	13946,874	11-22-2010	8672038	11-8-2013	FTT Inc.	Advanced Hot Section Materials And Coatings Test Rig
F092R	12914,138	8-28-2009	8291648	10-14-2012	FTT Inc.	Advanced Hot Section Materials And Coatings Test Rig
F091R	12782,118	8-17-2009	8361424	2-28-2013	FTT Inc.	Turbine Vane Mate Face With Impingement Cooling
F098R	12820,194	3-18-2010	8481283	7-28-2013	FTT Inc.	Turbine Blade With Cooling And Sealing
F098R	12820,584	12-1-2010	8618845	12-11-2013	FTT Inc.	Turbine Blade With Tip Cooling Circuit
F099R	12820,220	7-21-2008	8454301	6-4-2013	FTT Inc.	Turbine Blade With Serpentine Cooling
F002C	13105,054	8-18-2012	8474238	7-2-2013	FTT Inc.	Industrial Gas Turbine Engine
F002R	12784,827	10-16-2007	7980082	7-18-2011	FTT Inc.	Industrial Gas Turbine Engine
F004R	12780,267	7-18-2008	7893358	2-22-2011	FTT Inc.	Vertical Axis Wind Turbine With Direct Drive Generator
F005R	12781,327	10-1-2008	8213845	7-10-2012	FTT Inc.	Floating Air Seal For A Turbine Machine
F056R	12834,871	8-23-2011	8117476	11-27-2012	FTT Inc.	Turbine Blade With Tip Cooling Circuit
F068R	12840,841	8-18-2008	8388364	3-18-2013	FTT Inc.	Turbine Stator Vane With Endwall Cooling
F011R	12840,871	8-18-2008	8388360	3-5-2013	FTT Inc.	Turbine Ring Segment
F013R	12780,766	8-22-2011	8386188	2-5-2013	FTT Inc.	Multiple Piece Turbine Blade/Vane
F014R	12817,448	11-22-2010	8770613	7-8-2014	FTT Inc.	Apparatus And Process For Rotor Creep Monitoring
F018R	12834,208	8-21-2009	8386571	3-18-2013	FTT Inc.	Turbine Blade With Multiple Near Wall Serpentine Flow Cooling
F019R	12840,878	3-8-2011	8430828	4-30-2013	FTT Inc.	Turbine Vane With Mate Face Seal
F026R	12838,818	1-28-2008	8522286	8-23-2011	FTT Inc.	Aerodynamically Modified Labyrinth Seal
F028R	12808,945	8-18-2012	8558252	8-13-2013	FTT Inc.	Turbine Blade With Multiple Impingement Cooling
F029R	12888,817	10-19-2010	8588997	10-28-2013	FTT Inc.	Turbine Blade With Core Print-Out Hole
F042R	12896,372	10-21-2010	8695241	8-13-2013	FTT Inc.	Turbine Blade With Cooling And Tip Sealing
F044R	12896,403	10-21-2010	8695384	2-5-2013	FTT Inc.	Turbine Blade With Tip Seal Cooling Channel
F050R	12905,421	6-8-2010	8396885	2-5-2013	FTT Inc.	Turbine Blade With Cooling
F058R	12909,546	3-25-2010	8511888	8-27-2013	FTT Inc.	Turbine Blade With Platform Cooling
F062R	12851,888	4-23-2010	8517887	8-27-2013	FTT Inc.	Turbine Vane With Cooled Flow Cooling Passages
F061R	12851,888	11-8-2010	8581191	11-26-2013	FTT Inc.	Film Cooling Hole For Turbine Airfoil
F062R	12851,884	10-18-2013	8778936	7-8-2014	FTT Inc.	Turbine Blade With Near Wall Cooling Channels
F064R	12841,336	3-21-2011	8688980	12-18-2013	FTT Inc.	Turbopumps With A Tapered Hydrostatic Bearing
F007R	12905,274	10-8-2012	8672648	11-8-2013	FTT Inc.	Rocket Engine Propulsion System
F073R	12913,823	7-21-2010	8421283	4-18-2013	FTT Inc.	Large Floating Vertical Axis Wind Turbine
F076R	12988,148	4-21-2011	8952882	1-7-2014	FTT Inc.	High Temperature Turbine Stator Vane
F077R	12889,807	8-27-2011	8622735	12-10-2013	FTT Inc.	Turbine Blade With Offuser Cooling Channel
F078R	12857,912	8-22-2010	8488246	5-28-2013	FTT Inc.	Blade With Micro Serpentine Cooling
F088R	12858,884	12-13-2010	8622890	1-7-2014	FTT Inc.	Inter-Propeller Thrust Seal
F088R	12872,791	8-28-2010	8682295	10-22-2013	FTT Inc.	Three Phase Boreless Tip Seal Cooled Blade

F004R	43905,856	5/0/2013	8055580	11/19/2013	FTT Inc.	Turbine Vane With Trailing Edge Extension
F005R	43477,618	5/8/2012	8096663	12/3/2013	FTT Inc.	Base For A Turbine
F006R	13011,284	10/30/2008	8438604	5/14/2013	FTT Inc.	Base With Coated Strouhal Shaped Grooves
FTT-102C	11101,708	4/8/2005	7212889	5/12/2007	FTT Inc.	Passive Clearance Control
FTT-103R	11185,030	7/1/2008	7583182	7/12/2008	FTT Inc.	Composite Tip Shroud Ring
FTT-107R	11209,527	7/18/2005	7410342	8/12/2009	FTT Inc.	Airfoil Support
FTT-108R	61020,774	8/19/2005	7241107	7/19/2007	FTT Inc.	Gas Turbine Airfoil With Adjustable Cooling Air Flow
FTT-109R	61292,405	7/20/2005	7473475	1/8/2009	FTT Inc.	Blisk Weld Configuration For A Rotor Disc Assembly
FTT-110R	11185,154	7/21/2005	7500608	3/10/2009	FTT Inc.	Airfoil Having Porous Metal Filled Cavities
FTT-115R	11146,658	8/18/2005	7423417	9/8/2009	FTT Inc.	Airfoil With A Porous Fiber Metal Layer
FTT-112R	11208,671	8/18/2005	7415803	9/2/2008	FTT Inc.	Turbine Blade With Ceramic Tip
FTT-113R	11439,840	8/18/2005	7677048	3/18/2010	FTT Inc.	Turbine Last Stage Blade With Forced Vortex Groove Cooling Air
FTT-114R	11899,382	9/2/2005	7658936	2/4/2010	FTT Inc.	Optimized Blade Tip Clearance Process For A Hub Tolerant Design
FTT-115C	12838,756	12/12/2007	8079453	12/8/2011	FTT Inc.	Centrifugal Impeller Having Forward And Reverse Flow Paths
FTT-117R	61019,168	9/17/2006	7422413	9/8/2008	FTT Inc.	Shroud Tip Clearance Control Ring
FTT-118R	11255,128	9/23/2005	7445428	11/4/2008	FTT Inc.	Guide Vane Outer Shroud Bias Arrangement
FTT-119C	12943,935	2/22/2009	8015709	6/13/2011	FTT Inc.	Spar And Shell Blade With Segmented Shell
FTT-119C2P	12155,386	1/18/2009	7798014	7/28/2010	FTT Inc.	Tangential Shell For A Spar And Shell Turbine Airfoil
FTT-119R	11242,320	16/4/2005	7670116	3/2/2010	FTT Inc.	Turbine Vane With Spar And Shell Construction
FTT-121R	11140,119	8/27/2005	7232236	8/19/2007	FTT Inc.	Passive Bearing Clearance Control Using A Pre-Groove
FTT-123R	11437,531	10/19/2005	7387144	7/8/2008	FTT Inc.	Bearingless Floating Wind Turbine
FTT-123R	11214,503	11/19/2008	7491681	7/22/2008	FTT Inc.	Bearing Geomer Having A Crated Vane
FTT-123R	11254,268	11/23/2008	7429132	9/30/2008	FTT Inc.	Hydraulic Air Bearing With A Porous Metal Ring
FTT-125R	11295,125	10/20/2005	7540709	9/2/2009	FTT Inc.	Box Rim Cavity
FTT-142R	11198,980	12/1/2006	7448844	11/11/2008	FTT Inc.	Blisk Having Partially Cut Blade Attachment
FTT-146C	12487,882	10/18/2007	8168407	8/17/2012	FTT Inc.	Small Gas Turbine Engine With Multiple Burn Zones
FTT-148C	13481,080	8/12/2009	8307991	11/13/2012	FTT Inc.	Small Gas Turbine Engine With Multiple Burn Zones
FTT-148R	11224,936	9/17/2005	7588943	8/4/2008	FTT Inc.	Small Gas Turbine Engine With Multiple Burn Zones
FTT-147C	12487,803	9/18/2008	7987057	8/18/2011	FTT Inc.	Gas Turbine Engine With An Air Cooled Bearing
FTT-147D	12484,509	9/22/2010	7942608	5/17/2011	FTT Inc.	Gas Turbine Engine With An Air Cooled Bearing
FTT-147R	11210,617	6/3/2005	7592518	7/21/2009	FTT Inc.	Gas Turbine Engine With An Air Cooled Bearing
FTT-148D1P	12841,274	4/22/2008	8205408	6/28/2012	FTT Inc.	Dual Heat Exchanger-Power Cycle
FTT-148R	11655,708	1/18/2007	7770376	8/10/2010	FTT Inc.	Dual Heat Exchanger-Power Cycle
FTT-151R	11808,012	4/23/2006	7540713	6/2/2008	FTT Inc.	Threaded Rotor Assembly With Centrifugal Lock
FTT-153R	11029,455	8/27/2008	7858540	2/4/2010	FTT Inc.	Turbine Airfoil With An Air Cooled Tip Layer
FTT-154R	11214,814	6/12/2006	7948643	6/21/2008	FTT Inc.	Pressure Balanced Centrifugal Tip Seal
FTT-158R	11271,751	1/18/2005	7896822	3/30/2010	FTT Inc.	Rotary Cup Fuel Injector
FTT-163R	11254,267	8/22/2009	8141880	3/27/2012	FTT Inc.	Hybrid Gas Turbine And Internal Combustion Engine
FTT-168R	11083,522	5/24/2006	7574804	8/18/2009	FTT Inc.	Advanced Hot Section Materials And Coatings Test Rig
FTT-171R	11642,287	3/7/2007	7697946	8/10/2011	FTT Inc.	Small Gas Turbine Engine With Lubricated Bearings
FTT-172R	11289,953	6/14/2006	7464816	1/14/2009	FTT Inc.	Batch Fixed Heat Exchanger
FTT-173R	11849,124	12/30/2004	7380434	4/22/2009	FTT Inc.	Apparatus And Method To Measure Air Pressure Within A Turbine Airfoil
FTT-176C	11325,216	1/12/2006	7390188	6/24/2008	FTT Inc.	Vortex Coating Of Turbine Blades
FTT-180R	11986,378	11/16/2007	7841834	11/30/2010	FTT Inc.	Method And Leading Edge Preparation Tool For Repairing A Turbine Engine Blade
FTT-181R	11787,660	1/17/2007	7996688	3/22/2011	FTT Inc.	Rotor Thrust Balance Activated Tip Clearance Control System
FTT-187R	11408,925	7/14/2006	7448424	1/14/2008	FTT Inc.	Passive Heterocyclic Bypass Flow Control For A Broad Seal Application
FTT-188R	11437,521	5/29/2006	7587836	8/17/2008	FTT Inc.	Process For Determining A Remaining Life For A Gas Turbine Airfoil
FTT-192R	11798,843	7/18/2006	7548896	7/6/2010	FTT Inc.	Hub To Shell Connection
FTT-197C	12839,750	8/7/2007	7918947	4/5/2011	FTT Inc.	Turbine Airfoil With A Flow Blocking Insert
FTT-199R	11463,432	8/11/2006	7473073	1/8/2008	FTT Inc.	Turbine Blade With Cooled Tip Roll
FTT-166R	11472,248	1/27/2009	7491622	1/27/2008	FTT Inc.	Turbine Airfoil With A Serpentine Flow Path
FTT-201R	11964,478	8/11/2006	7811380	11/3/2008	FTT Inc.	Turbine Blade With Triple Pass Serpentine Flow Cooling Circuit
FTT-204R	11600,448	11/18/2005	7550788	5/12/2009	FTT Inc.	Turbine Blade With A Serpentine Flow And Impingement Cooling Circuit
FTT-210R	11483,431	8/26/2006	7564038	6/8/2006	FTT Inc.	Dual Spool Shell With Inboard Seal
FTT-213R	11483,430	8/26/2006	7448213	1/14/2009	FTT Inc.	Stepped Labyrinth Seal
FTT-214R	11803,540	8/1/2009	7927474	5/8/2009	FTT Inc.	Chordwise Mini-Serentine Coating Concept (List Of 13)
FTT-215R	11800,447	8/19/2008	7825190	12/1/2009	FTT Inc.	Turbine Blade With Near-Flat Mach-Reflecting And Diffusion Cooling Circuit

FTT-216R	110301442	8/15/2009	7524478	7/7/2009	FTT Inc.	Turbine Airfoil With Multiple Near-Wall Compartment Cooling
FTT-217R	110485865	7/14/2009	7547180	6/14/2008	FTT Inc.	Turbine Airfoil Serpentine Flow Circuit With A Suction Pressure Regulator
FTT-218R	114371357	8/15/2006	7451804	10/7/2008	FTT Inc.	High Temperature Ceramic For A Roller Bearing
FTT-220R	114371487	8/15/2006	7578855	8/28/2008	FTT Inc.	Composite Gas Turbine Fan Blade
FTT-221R	114631381	8/20/2008	7458776	12/2/2003	FTT Inc.	Turbine Airfoil With Staggered Cooling Flow
FTT-222R	114411474	8/20/2008	7642932	1/5/2010	FTT Inc.	Integrated Turbine And Generator
FTT-227R	110451359	8/14/2008	7587536	10/6/2006	FTT Inc.	Turbine Airfoil With Do-Coupled Platform
FTT-236R	110485347	10/10/2008	7482135	11/18/2008	FTT Inc.	Friction Damper For A Bearing
FTT-242R	110510142	10/10/2008	7491030	2/17/2009	FTT Inc.	Magnetically Actuated Guide Vane
FTT-244R	110485880	10/10/2008	7572688	8/11/2008	FTT Inc.	Vane Ring With A Damper
FTT-246R	110301545	11/18/2009	7527475	5/5/2006	FTT Inc.	Turbine Blade With Near-Wall Cooling Passages
FTT-247R	110301545	11/18/2009	7544044	6/4/2006	FTT Inc.	Turbine Airfoil With Pedestal And Turbulence Cooling
FTT-248R	110301579	11/18/2009	7520725	4/21/2009	FTT Inc.	Near Wall Airfoil Leading Edge Multi-Holes Cooling
FTT-250R	110301575	7/21/2008	7888946	1/11/2011	FTT Inc.	Turbine Airfoil With Near-Wall Impingement And Vortex Cooling
FTT-252R	110301575	9/1/2008	7885347	4/13/2010	FTT Inc.	Turbine Blade Platform With Near-Wall Cooling
FTT-253R	110510141	8/25/2009	7494519	2/24/2009	FTT Inc.	Turbine Blade With Tip Configuration
FTT-254R	110301608	8/21/2009	7497658	3/3/2009	FTT Inc.	Turbine Airfoil With A Multi-Impingement Inlet Baffle
FTT-255R	110301608	8/21/2009	7507431	5/28/2008	FTT Inc.	Turbine Blade With Mini-Serpentine Tip-Cooling
FTT-258R	121181720	5/18/2007	7658835	4/28/2011	FTT Inc.	Gas Or Steam Turbine With Inlet Air Cooling
FTT-262DRV	120481219	10/21/2008	8208935	7/3/2012	FTT Inc.	Process For Redesigning A Distressed Component Under A Thermal And Structural Loading
FTT-263DRV3	120478205	10/21/2010	8885181	8/12/2013	FTT Inc.	Process For Redesigning A Distressed Component Under A Thermal And Structural Loading
FTT-264R	110301616	8/20/2006	7517152	4/14/2008	FTT Inc.	Squeeze Film Damper With Variable Support Stiffness
FTT-265R	110321745	11/19/2007	7877580	12/28/2010	FTT Inc.	Turbine Vane With End-Wall Leading Edge Cooling
FTT-268R	110321747	8/15/2009	7540712	9/2/2009	FTT Inc.	Turbine Blade With Trailing Edge Cooling Channel
FTT-269R	110321748	8/25/2009	7563072	7/21/2009	FTT Inc.	Turbine Airfoil With Near-Wall Span Flow Cooling Circuit
FTT-272R	110321747	8/25/2009	7560884	4/6/2010	FTT Inc.	Generic Core Assembly For Serpentine Flow Circuit In A Turbine Blade
FTT-273R	110301659	8/27/2008	7587536	10/8/2009	FTT Inc.	Turbine Blade With Vortex Cooled End Tip Rail
FTT-274R	110451359	10/18/2008	7587540	10/9/2006	FTT Inc.	Turbine Blade Showhead Film Cooling Hole Arrangement
FTT-282R	110451359	10/10/2008	7582678	7/21/2008	FTT Inc.	Turbine Blade With A Film Cooling Slot
FTT-283R	110301275	12/8/2009	7748208	7/8/2010	FTT Inc.	Small Single Line Gas Turbine Engine With Oil-Less Bearing Arrangement
FTT-283R	110301452	11/16/2008	7594887	8/4/2009	FTT Inc.	A Near Wall Spiral Flow Serpentine Cooling Arrangement
FTT-284R	110301646	11/16/2008	7637730	12/29/2009	FTT Inc.	Turbine For Turbine Airfoil Cooling Passage
FTT-288R	110301587	12/1/2008	7648132	1/12/2010	FTT Inc.	Turbine Rotor Blade With A Nested Parallel Serpentine Flow Cooling Circuit
FTT-301R	110301857	11/28/2006	7764044	4/27/2010	FTT Inc.	Turbine Blade With Attachment Shear Inserts
FTT-307R	110728110	3/28/2007	7713029	5/11/2010	FTT Inc.	Blade With Spur And Bush Assembly
FTT-309C	120361822	5/22/2007	7871862	7/8/2011	FTT Inc.	Labyrinth Seal
FTT-327C	120441878	8/19/2009	8047730	11/1/2011	FTT Inc.	Near Wall Compartment Cooled Turbine Blade
FTT-328R	110421255	4/9/2007	7586555	3/24/2008	FTT Inc.	Process And Apparatus For Treating A Material Under A High Temperature And Pressure Environment
FTT-329R	110301380	1/28/2007	7740448	8/22/2010	FTT Inc.	Process For Adjusting A Flow Capacity Of An Airfoil
FTT-331R	110654129	11/17/2007	7760414	8/24/2010	FTT Inc.	Turbine Blade With Multiple Metering Trailing Edge Cooling Holes
FTT-334C	120557489	6/11/2010	8277195	10/2/2012	FTT Inc.	Thin Walled Turbine Blade And Process For Making The Blade
FTT-334CNP	130822551	11/22/2010	8808296	8/18/2013	FTT Inc.	Thin Walled Turbine Blade And Process For Making The Blade
FTT-336R	110715045	3/9/2007	7766617	8/3/2010	FTT Inc.	Transpiration Cooled Turbine Airfoil
FTT-338R	110715046	3/9/2007	7713628	5/11/2010	FTT Inc.	Turbine Blade With Tip Cooling
FTT-340R	110726335	3/21/2007	7794638	4/27/2010	FTT Inc.	Case With Multiple Transited Film Cooling Slots
FTT-342R	110301378	1/28/2007	7688982	12/25/2010	FTT Inc.	Segmented Ring For Industrial Gas Turbine
FTT-342R	110715044	3/8/2007	7762418	8/24/2010	FTT Inc.	Regenerative Leading Edge Inlet For An Air
FTT-343R	110715044	4/9/2007	7688971	3/30/2010	FTT Inc.	Bladed Rotor With Shear Pin Attachment
FTT-353R	110715042	3/8/2007	7752791	7/27/2010	FTT Inc.	Composite Airfoil And Platform Arrangement
FTT-359R	110732192	4/3/2007	7722327	5/25/2010	FTT Inc.	Multiple Vortex Cooling Mechanism For Thin Airfoil
FTT-362R	110726168	3/28/2007	7821718	11/24/2009	FTT Inc.	Turbine Vane With Leading Edge Film Region Impingement Cooling
FTT-365C	130980828	2/18/2011	8290851	8/28/2012	FTT Inc.	Transition Duct With Integral Guide Vanes
FTT-368R	110301322	5/8/2007	7762775	7/27/2010	FTT Inc.	Turbine Airfoil With Cooled Thin Trailing Edge
FTT-367R	110801611	12/18/2008	7688948	7/28/2011	FTT Inc.	Turbine Blade With Impingement Cooling
FTT-383C	130291389	1/24/2012	8257041	6/4/2012	FTT Inc.	Turbine Blade With Triple Spiral Serpentine Flow Circuits
FTT-385R	110821134	6/21/2007	7788916	8/3/2010	FTT Inc.	Turbine Vane Endwall With Cascading Film Cooling Diffusion Slots
FTT-370R	110809324	8/11/2007	7785071	8/31/2010	FTT Inc.	Turbine Airfoil With Spiral Trailing Edge Cooling Passages



FTT-375R	110801362	10/1/2008	8070441	12/6/2011	FTT Inc.	Turbine Airfoil With Trailing Edge Cooling Channels
FTT-376R	110801327	8/31/2007	7796608	9/7/2010	FTT Inc.	Turbine Blade With Showerhead Film Cooling Holes
FTT-376R	110801335	8/21/2007	7788778	8/21/2010	FTT Inc.	Turbine Blade With Showerhead Film Cooling
FTT-376R	110801328	8/25/2006	7651442	4/28/2011	FTT Inc.	Rotor Blade Assembly With On-Coupled Composite Platform
FTT-376R	110801323	5/31/2007	7670113	5/23/2010	FTT Inc.	Turbine Airfoil With Serpentine Trailing Edge Cooling Circuit
FTT-377R	110789842	12/21/2007	7672113	7/5/2011	FTT Inc.	Integral Turbine Blade And Platform
FTT-383R	120407856	8/30/2010	8288586	8/26/2012	FTT Inc.	Turbine Hybrid Metallic And Plastic Heat Case
FTT-383R	110801715	1/9/1/2007	7717675	5/18/2010	FTT Inc.	Turbine Airfoil With A Near Wall Slot Serpentine Cooling Circuit
FTT-386R	110821137	8/21/2007	7775783	6/17/2010	FTT Inc.	Centrifugal Pump With Rotor Thrust Balancing Seal
FTT-388R	120401358	8/15/2009	7941800	6/18/2011	FTT Inc.	Process For The Design Of An Airfoil
FTT-388R	110801731	8/7/2007	7788809	8/12/2010	FTT Inc.	Turbine Vane Endwall With Flush Wall Heat Shield
FTT-388R	110801884	12/26/2008	7674804	1/25/2011	FTT Inc.	Turbine Blade With Detached Platform
FTT-389R	110801740	9/7/2007	7784846	4/27/2010	FTT Inc.	Turbine Blade With Serpentine Blade Cooling Circuit
FTT-389R	110827076	9/21/2007	7888890	10/5/2010	FTT Inc.	Turbine Blade With Trailing Edge Bleed Slot Arrangement
FTT-401R	110827051	12/21/2007	7883745	6/21/2011	FTT Inc.	Composite Turbine Blade
FTT-402R	110875871	8/21/2007	7895233	2/23/2010	FTT Inc.	Low Speed Shaft For Small Twin Spool Gas Turbine Engine
FTT-408R	120184802	4/18/2009	8011884	9/8/2011	FTT Inc.	Fan Blade Assembly For A Gas Turbine Engine
FTT-410R	120184728	8/11/2008	7748441	8/22/2010	FTT Inc.	Small Gas Turbine Engine With Unibond Exhaust
FTT-414R	120184885	8/11/2008	7748892	7/6/2010	FTT Inc.	Stator Tube For A Gas Turbine Engine
FTT-420R	110801031	10/18/2007	7788972	8/31/2010	FTT Inc.	Large Chord Turbine Vane With Serpentine Film Cooling Circuit
FTT-420R	110801030	11/18/2007	8047797	11/1/2011	FTT Inc.	Turbine Blade With Trailing Edge Free Slot
FTT-420R	110801037	7/27/2010	8011888	8/8/2011	FTT Inc.	Turbine Blade With Trailing Edge Tip Corner Cooling
FTT-424R	110801038	8/25/2009	8197210	6/12/2012	FTT Inc.	Turbine Vane With Leading Edge Inlet
FTT-425R	110801035	12/22/2009	7876781	2/1/2011	FTT Inc.	Turbine Blade With A Showerhead Film Cooling Hole Arrangement
FTT-443R	110801980	3/18/2009	7951437	4/28/2011	FTT Inc.	Turbine Case With Inlet And Outlet Vanes
FTT-443R	110801057	10/4/2006	7688903	6/7/2011	FTT Inc.	Turbine Blade Serpentine Cooling Concept
FTT-444R	110875872	10/18/2007	8047798	11/1/2011	FTT Inc.	Turbine Airfoil With Near-Wall Serpentine Cooling
FTT-444R	110875897	3/28/2008	8052350	11/8/2011	FTT Inc.	Turbine Airfoil With Showerhead Cooling
FTT-450R	110875866	8/22/2008	8061675	11/22/2011	FTT Inc.	Turbine Rotor With Edge Cooling
FTT-451R	110801039	1/18/2008	7988410	8/2/2011	FTT Inc.	Blade Tip Shroud With Circular Grooves (S Of 26)
FTT-454R	110801028	10/20/2008	8091988	11/22/2011	FTT Inc.	Process For Composite Ddt Analysis Of A Turbine Airfoil
FTT-458R	110875873	11/12/2010	8047789	1/11/2011	FTT Inc.	Turbine Airfoil
FTT-462R	110801036	12/21/2007	7648285	5/17/2011	FTT Inc.	Twin Spool Rotor Assembly For Small Gas Turbine Engine
FTT-462R	110875874	12/15/2008	7688812	7/18/2011	FTT Inc.	Low Pressure Turbine Rotor Disk
FTT-465R	110875876	3/28/2008	8048990	8/14/2012	FTT Inc.	Turbine Inlet-Stage Gap Cooling And Sealing Arrangement
FTT-466R	110801040	3/22/2008	7887583	6/29/2011	FTT Inc.	Turbine Blade With Tip Serpentine Cooling Channel
FTT-467C	120445078	2/6/2013	8496635	6/11/2013	FTT Inc.	Turbine Vane With Endwall Cooling
FTT-468R	120004347	8/18/2009	7891004	8/8/2011	FTT Inc.	Centrifugally Loaded Segmented Rotor Seal For Spar And Shell Turbine Blades
FTT-470R	120022217	11/17/2011	8162817	4/30/2012	FTT Inc.	Turbine Blade With Star Arc Seal
FTT-471R	110801034	8/15/2006	7648896	12/7/2010	FTT Inc.	Turbine Blade With Serpentine Film Tip Seal Cooling
FTT-472R	110801033	12/18/2008	7688417	8/2/2011	FTT Inc.	Air Cooled Turbine Blade
FTT-474R	120015114	8/26/2008	8070494	12/8/2011	FTT Inc.	Turbine Airfoil With Trailing Edge
FTT-475R	120056142	8/17/2010	8218789	7/3/2012	FTT Inc.	Radially Slip Seal For A Turbine Shroud
FTT-478R	110801017	6/7/2007	7875823	1/25/2011	FTT Inc.	Process For Assembling A Hollow High Speed Rotor Shaft
FTT-481R	120004361	8/21/2008	8043657	10/29/2011	FTT Inc.	Turbine Airfoil With Full Impingement Cooling Concept
FTT-482R	120004346	4/28/2008	8018692	8/13/2011	FTT Inc.	Turbine Blade Tip Turb Cooling
FTT-484R	120117223	8/11/2008	8011881	6/6/2011	FTT Inc.	Turbine Vane With Serpentine Cooling
FTT-482R	120004349	8/21/2007	7688893	5/31/2011	FTT Inc.	Turbine Blade With Dual Serpentine Cooling
FTT-489R	120004882	8/26/2010	7878275	7/12/2011	FTT Inc.	Turbine Blade With Multi-impingement Leading Edge Cooling
FTT-487R	120141826	1/22/2009	8087927	10/30/2012	FTT Inc.	Free Wall Multiple Impingement Serpentine Cooled Airfoil
FTT-488R	120118344	4/4/2006	8079611	12/20/2011	FTT Inc.	Turbine Blade With Multi-impingement Cooled Squarer Tip
FTT-488R	120118380	2/22/2008	8087381	1/3/2012	FTT Inc.	Turbine Blade With Tip Region Cooling
FTT-490R	110801035	5/15/2006	8098484	11/29/2011	FTT Inc.	Film Cooling Hole For A Turbine Airfoil
FTT-492R	120004793	4/30/2009	8087892	1/12/2012	FTT Inc.	Turbine Blade With Dual Serpentine Film Grooves
FTT-493R	120004513	1/23/2008	8018853	8/13/2011	FTT Inc.	Turbine Vane With Film Cavity Seal
FTT-494C3P	120004801	1/17/2011	8475112	7/2/2013	FTT Inc.	Multiple Stage Compressor With Last Stage Airfoil Cooling
FTT-494C3P2	120004820	8/28/2013	8194967	8/5/2014	FTT Inc.	Multiple Stage Compressor With Last Stage Airfoil Cooling

FTT-4640IP5	13946,908	1/22/2009	8721268	5/13/2014	FTT Inc.	Multiple Stage Compressor With Last Stage Aerial Cooling
FTT-4640IP4	14246,166		8858161	10/14/2014	FTT Inc.	Multiple Stage Compressor With Last Stage Aerial Cooling
FTT-464R	12284,340	10/18/2007	8240975	8/14/2012	FTT Inc.	Multiple Stage Compressor With Last Stage Aerial Cooling
FTT-465R	12694,880	11/28/2008	8542886	8/14/2012	FTT Inc.	Turbine Inlet Stage Seal Crest
FTT-465R1	12178,822	9/7/2007	7568856	1/11/2011	FTT Inc.	Turbine Blade With Spar And Shell
FTT-512R	12021,458	3/18/2008	8088936	8/20/2011	FTT Inc.	Swirl Compressor With Counter Swirl Fuel Blinger
FTT-513R	02024,897	11/10/2011	8142189	3/27/2012	FTT Inc.	Turbine Blade With Spar And Shell
FTT-523R	02050,758	8/9/2007	7931441	4/26/2011	FTT Inc.	Inlet With Tip Structure And Turbine Blades
FTT-525R	12048,521	8/14/2009	8217684	6/27/2013	FTT Inc.	Turbine Blade With Multiple Impingement Cooled Passages
FTT-5280V2	13095,417	7/9/2008	8292501	10/23/2012	FTT Inc.	Turbopump With Cavitation Deflector
FTT-529C	12880,142	7/28/2008	8177489	5/15/2012	FTT Inc.	Axial Tip Turbine Driven Pump
FTT-529F	12680,780	3/18/2008	7528811	11/28/2010	FTT Inc.	Axial Tip Turbine Driven Pump
FTT-531CIP	12244,389	10/12/2008	7738131	8/18/2010	FTT Inc.	Turbine Blade With Carbon Nanotube Shell
FTT-537R	12118,548	8/13/2008	7833175	12/15/2008	FTT Inc.	Resonating Blade For Electric Power Generation
FTT-540CIP	12145,368	9/28/2011	8848274	9/30/2014	FTT Inc.	Sensor For Detecting Hydrocarbon In A Seal
FTT-540R	12131,568	10/16/2008	8057185	11/18/2011	FTT Inc.	Sensor For Detecting Hydrocarbon In A Seal
FTT-540R1	12147,390	12/14/2008	7971473	7/8/2011	FTT Inc.	Apparatus And Process For Testing Turbine Vane Airflow
FTT-562R	12138,511	11/18/2007	8048853	11/11/2011	FTT Inc.	Stackable Generator Arrangement
FTT-567R	12142,884	8/21/2008	8081803	11/22/2011	FTT Inc.	Eulerian Diffuser Ring With Stepped Trailing Edge
FTT-568R	12140,528	10/11/2008	8272845	8/25/2012	FTT Inc.	The With Fibrous Reinforced
FTT-597C	13073,887	11/10/2008	8285986	8/7/2012	FTT Inc.	Variable Inlet Guide Vane Assembly
FTT-597R	12958,901	10/19/2007	7922445	4/12/2011	FTT Inc.	Variable Inlet Guide Vane With Actuator
FTT-575R	12195,287	8/12/2008	7825454	4/12/2011	FTT Inc.	Process For Determining Remaining Life Of A Deformed Turbine Component
FTT-581R	12195,895	9/12/2009	8043058	10/29/2011	FTT Inc.	Turbine Blade With Curved Tip Cooling Holes
FTT-582C	13493,130	4/17/2011	8483689	8/25/2013	FTT Inc.	Turbine Blade Tip Feature With Trench Cooling Holes
FTT-582F	12038,523	4/16/2008	8113179	2/14/2012	FTT Inc.	Turbine Blade Tip Flat Cooling And Sealing Concept
FTT-584R	12208,538	8/7/2011	8048999	10/28/2011	FTT Inc.	Turbine Blade With Multi-Vortex Tip Cooling And Sealing
FTT-588R	12212,011	10/19/2007	8081209	11/22/2011	FTT Inc.	Process And Apparatus For Slong A Disruptor Ring
FTT-593R	12542,405	8/23/2009	8133014	3/13/2012	FTT Inc.	Triple Acting Radial Seal
FTT-593R1	12195,461	11/26/2007	8091687	11/22/2011	FTT Inc.	Turbine Blade With Tip Radial Cooling
FTT-594R	12112,898	11/18/2008	7997888	6/18/2011	FTT Inc.	Turbine Blade Tip Flat Cooling And Sealing
FTT-597R	12142,578	4/7/2009	8070442	12/8/2011	FTT Inc.	Turbine Airfoil With Near Wall Cooling
FTT-598F	12088,858	11/7/2008	8057198	11/15/2011	FTT Inc.	Shaped Film Cooling Hole For Turbine Airfoil
FTT-602R	12183,240	8/28/2008	7910395	10/12/2010	FTT Inc.	Process For Determining A Remaining Useful Life Of A Turbine Component
FTT-604R	12277,586	3/17/2011	8245519	8/21/2012	FTT Inc.	Laser Shaped Film Cooling Hole
FTT-616R	12858,705	2/23/2011	8234668	9/17/2013	FTT Inc.	Vane Segments Tip Clearance Control
FTT-616R1	12875,138	10/14/2009			FTT Inc.	Thermal Mechanical Fatigue Test Rig
FTT-625R	12267,167	12/16/2008	8097181	11/19/2011	FTT Inc.	Multi-Expansion Film Cooling Hole For Turbine Airfoil
FTT-628R	12192,513	11/7/2008	8097178	11/19/2011	FTT Inc.	Film Cooling Hole For Turbine Airfoil
FTT-638F	12178,324	2/12/2008	8022881	1/12/2012	FTT Inc.	Designed Stator Assembly
FTT-640F	12480,785	9/12/2008	8108159	2/7/2012	FTT Inc.	Instrumentation Installation Test For A Pressure Vessel Test Rig
FTT-642R	12288,410	7/28/2007	7988921	7/18/2011	FTT Inc.	Turbine Blade With Trailing Edge Cooling
FTT-643D	12177,847	8/9/2008	8022592	11/8/2011	FTT Inc.	Process For Cooling A Turbine Blade Trailing Edge
FTT-643R	12335,424	11/16/2007	7985680	7/26/2011	FTT Inc.	Turbine Blade With Trailing Edge Cooling
FTT-648R	12077,541	2/17/2011	8258202	9/4/2012	FTT Inc.	High Bypass Turbofan
FTT-672C	13094,218	1/30/2009	8162808	4/24/2012	FTT Inc.	Turbine Airfoil Formed As A Single Piece But With Multiple Materials
FTT-672F	12193,888	2/12/2008	8069483	11/26/2011	FTT Inc.	Turbine Airfoil With Non-Parallel Film Pass
N1081	10853,574	8/2/2003	6577932	4/12/2005	FTT Inc.	Passive Clearance Control
N109A	10781,575	3/2/2004	6681846	1/3/2008	FTT Inc.	Vortex Cooling Of Turbine Blades
N109B	10781,591	3/2/2004	6884521	2/7/2008	FTT Inc.	Leading Edge Diffusion Cooling Of Turbine Blade
N1108	10975,264	10/28/2004	7194752	6/12/2008	FTT Inc.	Graded Wire Gasket
N1110	11988,156	2/10/2005	7293414	11/13/2007	FTT Inc.	High Performance Method For Thrusting Of Closed Gas Turbine Cycles

Patent Title	Filed Date	Issued Date	Inventor	Publication No.
Turbine Stator Vane	5/19/2011	4/22/2014	G. Liang	US8702375
Industrial Turbine Blade with Platform Cooling	2/23/2011	2/4/2014	G. Liang	US8841377
Turbine Exhaust Cylinder and Strut Cooling	8/26/2011	2/4/2014	G. Liang	US8841382
Turbine Exhaust Cylinder Cooling with Heat Shield	11/18/2011	8/24/2014	G. Liang	US8758911
Turbine Stator Vane with Purge Air Channel	5/19/2011	1/14/2014	G. Liang	US8933204
Turbine Vane with Near Wall Multiple Impingement Cooling	9/27/2011	12/17/2013	G. Liang	US8939493
Three Flute Bonded Thin Wall Cooled Blade	12/20/2010	10/22/2013	G. Liang	US8822285
Turbine Blade with Platform Cooling	11/22/2010	8/20/2013	G. Liang	US8811805
Turbine Airfoil with Micro-Serpentine Cooling Passages	8/11/2009	5/5/2009	G. Liang	US7527474
Turbine Rotor Blade with Low Cooling Flow Trim Walled	3/13/2009	11/22/2011	J. Rynik	US8081800
Turbine Blade and Process for Making the Blade	9/19/2012	8/13/2013	J. Broetzmeier	US8505256
Turbine Blade with Multiple Impingement Cooling	10/21/2010	8/13/2013	G. Liang	US8828250
High Temperature Turbine Stator Vane	12/13/2010	1/7/2014	G. Liang	US8822882
Turbine Airfoil with Micro Cooling Channels	1/25/2010	11/27/2012	J. Downs	US8317475
Transition Duct Spiral Finned Cooling Passage	10/21/2009	11/19/2012	G. Liang	US8307654

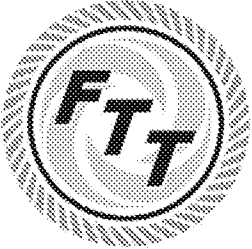
**(ii) Trademark Registration/Applications:**

Mark	Country	Reg. No.	Appl. No.	Reg. Date	Filing Date	Owner
ARTIC	United States	4,663,234	86/283,525	December 30, 2014	May 16, 2014	Florida Turbine Technologies, Inc.
ARTIC	United States	N/A	87/279,495	N/A	December 23, 2016	Florida Turbine Technologies, Inc.
AFFORDABLE INNOVATIONS	United States	N/A	87/148,027	N/A	August 23, 2016	Florida Turbine Technologies, Inc.

(iv)

**Common Law Trademarks:**

1. FTT
2. FTT & Design:



3. SONIC INFRARED INSPECTION
4. SONIC IR
5. GREEN ARMOUR
6. BIG AIR
7. TURBOGT
8. FTT200
9. FTT650
10. BIG RHESTE
11. FTT50
12. ERAM
13. CTS & Design



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