Tokelau ultra micro turbine

The Ultra-Micro-GasTurbine Generator, that is a power device with high power density, is characterized by very reduced overall dimensions, which introduces complications in the design and the realization of the mechanical components who represents the greater difficulty to ...

The particular nomenclature is UMGTG-UDR1 (Ultra-Micro Gas Turbine Generator). The final configuration of the prototype (for which a patent is pending) is described in the paper as well, together ...

The ultra-micro gas turbine (UMGT) consists of a centrifugal compressor, a radial turbine, an annular combustor, and recuperators, and a high speed generator. It is designed to run 400,000rpm, compression ratio 3.0, and TIT 1200K. The ...

This paper reports the specification, the design, fabrication, and testing of a permanent-magnet generator suited for an ultra micro-gas turbine rotating at 840 000 rpm. At this rotation speed, this micro turbine designed by Onera should deliver 55 W. The generator itself was successfully realized and tested by Celeroton, following Onera"s specifications. The mechanical to electrical ...

The increasing demand for miniaturized radio-controlled vehicles inspired the following research. The uses of these unmanned miniaturized/micro vehicles range from aero-modeling to drones for urban control and military applications too. The common characteristic of these vehicles is the need for a light and compact propulsion system. The radio-controlled ...

Object of the present work is the detailed study, in every its aspect, of Ultra-Micro-Gas-Turbine Generator, that is a power device with high power density. These generators, although the covered power range oscillates between 100 and 500W, is characterized by

As part of an ongoing effort to develop a micro-scale gas turbine engine for power generation and micropropulsion applications, this paper presents the design, modeling, and experimental ...

Micro- and Ultra-Micro Gas Turbine (UMGT) devices, based on a micro compressor and a micro turbine installed on the same shaft, are more suitable for this scope for several reasons. They present a higher power density, both in terms of kW/kg and kW/m 3, lower emissions, less moving elements, multi-fuel capability (they operate almost equally ...

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Tokelau ultra micro turbine

A microturbine (MT) is a small gas turbine with similar cycles and components to a heavy gas turbine. The MT power-to-weight ratio is better than a heavy gas turbine because the reduction of turbine diameters causes an increase in shaft rotational speed.

The steamship "Turbinia" proved the viability of steam turbine power by showing up uninvited to the 1897 Royal Naval Review and racing between the assembled warships in full view of the Lords of the Admiralty and the Prince of Wales. She ...

an ultra micro gas turbine engine of the present invention includes a rotating disk which has a compressor, a wave rotor and a turbine, a first stationary member which includes an inlet and a first wave rotor port end plate, a second stationary member which includes an outlet and a second wave rotor port end plate and a combustion chamber which includes a fuel inlet and an igniter.

The ultra-micro gas turbine (UMGT) consists of a centrifugal compressor, a radial turbine, an annular combustor, and recuperators, and a high speed generator. It is designed to run 400,000rpm ...

As micro gas turbines are expected to offer the highest power density, several research groups launched programs to develop ultra micro gas turbines: IHI firm (Japan), PowerMEMS Consortium (Belgium). At Onera, a research program called DecaWatt is under development in order to realize a demonstrator of a micro gas turbine engine in the 50 to ...

An ultra-micro scale gas turbine (UMGT) is a miniaturised microscale gas turbine that generates electricity, and it is comprised of 5 main components: a radial turbine, a radial compressor, bearings, a combustor, and an electrical generator [1]. UMGTs are designed for a power range of 0-1000 W [2], and are of interest for a various range of ...

This section describes the general engineering characteristics of the ultra-micro turbo group (UMTG) object of the research. The compressor and turbine have been analyzed and simulated in detail ...

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