

Contact

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(LinkedIn)

Top skills

Thermodynamics

Startups

Product Development

Languages

Russian (Native or Bilingual)

English (Full Professional)

French (Native or Bilingual)

Chinese (Elementary)

Publications

TALIF measurements of oxygen atom density in the afterglow of a capillary nanosecond discharge

Investigation of capillary nanosecond discharges in air at moderate pressure: Comparison of experiments and 2D numerical modelling

Andrei Klochko

Co-founder and CEO at Airthium (YC S17)

Paris area, France

Summary

Airthium's mission is to deploy power conversion machines allowing to decarbonize the worldwide energy sector, as fast as possible. Our levers are economic and operational efficiency, thanks to technical and scientific innovation, and excellence in execution.

Our first product is a high temperature heat pump, which can be deployed anywhere quickly, and can provide decarbonized steam and hot air between 100 and 250°C to industrial processes, with minimal energy cost. Long term, our heat pumps are predicted to reach 550°C of delivery temperature.

We are part of Y Combinator's S17 Batch, and are laureates of the French "World Innovation Contest" (Concours Mondial de l'Innovation), and France 2030 program.

Experience

Airthium

Co-founder and CEO

March 2015 - Present (11 years 2 months)

Villebon-sur-Yvette, Île-de-France, France

Airthium develops a high temperature heat pump to produce decarbonized industrial heat, in the most cost-effective way possible. Our heat pumps are based on a breakthrough, proprietary near-isothermal Stirling engine, and can provide steam and hot air at any temperature between 100 and 250°C, with later designs predicted to reach up to 550°C. We can also produce both heating and cooling at the same time with a single machine.

Industrial heat at those temperatures alone is responsible for 3% of worldwide CO2 emissions. Currently, there is no cost-effective solution to decarbonize it in a scalable way.

I co-founded Airthium in March 2015; the company was incorporated one year later, and received funding from Y Combinator and other investors in the summer of 2017. I currently serve as CEO and CSO (Chief Science Officer).

Laboratoire de Physique des Plasmas, Ecole Polytechnique

3 years 5 months

Post-doctoral fellow

January 2015 - February 2015 (2 months)

Palaiseau, France

Completion of projects which were started during my PhD Thesis.

Experimental study of the collisional deactivation of electronically excited states in highly excited air and nitrogen plasmas. Academic research having applications in plasma assisted combustion ("better engine ignition"), and air flow control in aerospace applications (plasma actuators).

PhD Student

October 2011 - December 2014 (3 years 3 months)

Palaiseau, France

Experimental and numerical study of pulsed nanosecond discharges. Use of a carefully designed experimental platform to validate an excited species chemistry kinetic model. I studied fast (100 ns), uniform gas heating in plasmas, which has applications in combustion and ignition enhancement and aerodynamic flow control.

The work featured laser diagnostics, nanosecond time-resolved electrical diagnostics and imaging, spectroscopy, and numerical simulation, in collaboration with Moscow State University and University of Michigan.

Laboratoire de Physique des Plasmas

Intern

March 2011 - June 2011 (4 months)

Palaiseau, France

Preliminary work on my PhD thesis subject, focused on time-resolved electric field measurements in cold plasmas

Education

Ecole polytechnique

Master of Engineering (M. Eng.), Physics · (2007 - 2011)

Lycée Masséna

Mathematics and Physics · (2005 - 2007)