



Antonin Sanitas

PHD · PROCESS ENGINEER · DIGITAL TWINS FOR INDUSTRY

Gijón, Spain ·    · [linkedin.com/in/antoninsanitas](https://www.linkedin.com/in/antoninsanitas)

PhD and industrial process engineer, driven by the alliance of theory and practice. I design digital twins, process simulators and data-analysis tools that combine industrial expertise, process modeling and data analysis — increasingly powered by artificial intelligence — to make industry more efficient, reliable and sustainable.

PROFESSIONAL EXPERIENCE

Process, Digitalization & Simulation Engineer

2018 – PRESENT

ITURCEMI GRUPO · Gijón & Avilés, Spain

- Commissioned ArcelorMittal's Gijón coke batteries: Siemens SIMIT digital twin (1,000+ sensors/actuators), PCS7/WinCC factory acceptance testing, operator training.
- Led TIA Portal/WinCC automation migrations; built training simulators for biogas and sugar-refinery processes; modeled blast-furnace start-ups.
- Delivered applied R&D: graphene-plant techno-economic digital twin, real-time performance monitoring (Python, InfluxDB, Grafana), PI System traceability, AI-assisted control for an industrial gas furnace.
- Increasingly integrating artificial intelligence to improve decision support, process optimization and system performance.

Research Engineer

2015 – 2018

Arts et Métiers ParisTech – ENSAM · Aix-en-Provence, France

- Doctoral research on low-pressure sand casting of magnesium alloys using 3D-printed molds and fluid-flow simulation; produced casting design rules and several peer-reviewed publications.

Intern Engineer – E-Fan Electric Aircraft

2014

Airbus Group Innovations · Suresnes, France

- Preliminary design of the electric propulsion system: cockpit HMI, systems layout, maintenance definition, charging/cooling sizing. 2 patents filed with Airbus Group.

Intern Engineer – Drone Prototyping

2013

Groupe Studia · Aix-en-Provence, France

- End-to-end management of a 2 kg carbon-fiber drone prototype: design, procurement, regulation, benchmarking, manufacturing, flight testing.

Intern Maintenance Technician

2011

Twinjet · Aix-les-Milles, France

- Maintenance of Beechcraft 1900D twin-engine commuter aircraft under certified-technician supervision.

EDUCATION

PhD, Mechanical Engineering and Processes · Arts et Métiers ParisTech – ENSAM	2014–2017
Research Master, Science and Technology · Université de Bordeaux I	2013–2014
Aerospace Engineer · Arts et Métiers, Bordeaux	2013–2014
General Engineer, Mechanics, Manufacturing & Industrial Engineering · Arts et Métiers, Aix-en-Provence	2011–2013
Preparatory classes, Physics & Technology · Lycée Rouvière, Toulon	2009–2011
Scientific Baccalauréat, High Honours · Lycée du Coudon, La Garde	Until 2009

PUBLICATIONS & PATENTS

Experimental and numerical study of section restriction effects on filling behavior in low-pressure aluminum casting

J. of Materials Processing Technology, Vol. 254 · 2018

Geometrical effects on filling dynamics in low pressure casting of light alloys

Journal of Manufacturing Processes, Vol. 45 · 2019

Investigating surface roughness of ZE41 magnesium alloy cast by low-pressure sand casting

Int. J. of Advanced Manufacturing Technology · 2017

Mastering of the Filling Stage in Low Pressure Sand Casting Process

Materials Science Forum, Vol. 941 · 2019

Melt Composition Characterization and Fluid Flow Simulation of ZE41 Low Pressure Casting

6th Decennial Conf. on Solidification Processing · 2017

Filling Characterization into a Section Restriction in Low-Pressure Casting

Conference paper · 2017

Cooling device / method for an aircraft electric power source · Patent EU EP3031732 · 2016

Aircraft and method for fitting out such an aircraft · Patent FR EP3031730 · 2016

TOOLS & VOLUNTEERING

Industrial Simulation & Automation

Siemens SIMIT, PCS7, TIA Portal / WinCC, PI System, Procast

Digitalization & Data

Python, Unity, Grafana / InfluxDB

Engineering & Design

Solidworks, ANSYS, Catia V5/V6

OMEGA Astronomical Society ·

Current

Member · Gijón, Spain

Aéroclub du Soleil · Secretary,

2011–2014

Treasurer & Board Member · Var, France

Éclaireuses Éclaireurs de France ·

2010–2018

Youth Group Leader · Hyères, France