

CCRAFT SA

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Job ID: CAD2602

PIC Component Simulation Engineer

The company

CCRAFT is an independent photonic chip foundry specializing in thin-film lithium niobate (TFLN) technology. Built on over six years of development carried out entirely in an industrial manufacturing environment, CCRAFT now transitions to full-scale production. With in-house fabrication and a validated Process Design Kit (PDK), we address needs across telecom, datacom, quantum, and sensing markets. Our offering includes multi-project wafer (MPW) runs, custom dedicated fabrication, and scalable production. By uniting industrial manufacturing with design enablement, CCRAFT accelerates the deployment of next-generation photonic systems.

The role

We are seeking a **PIC Component Simulation Engineer** to design and simulate photonic integrated circuits that maintain and continuously enhance CCRAFT's PIC platforms. The role directly contributes to PDK development by generating robust, well-qualified component models and by building a deep understanding of manufacturing technology nodes required for scalable and reliable components. You will help expand the applicability of CCRAFT's platforms across multiple domains by translating design requirements and fabrication constraints into foundry-ready building blocks, working closely with PDK and design integration engineers to ensure alignment between design, process, and long-term industrialization.

Responsibilities

Component Design & Simulation

- Design and simulate passive and active photonic components using advanced multi-physics numerical methods (optical, RF, thermal, electro-optic).
- Develop physically accurate models for high-speed modulators, waveguides, couplers, resonators, and fiber-to-chip interfaces.
- Tackle fundamental challenges related to RF performance, bandwidth, loss, polarization management, and packaging-aware coupling strategies.
- Perform parametric studies and sensitivity analyses to understand process tolerances and performance trade-offs.
- Propose and develop innovative component concepts to expand the application domains of the CCRAFT platform.

Technology & Manufacturing Alignment

- Ensure component designs are consistent with production technologies, process capabilities, and scalability constraints of the platform.
- Translate fabrication constraints into realistic design spaces and simulation assumptions.
- Support mask layout and wafer-level integration from a device physics perspective.
- Collaborate with fabrication and measurement teams to correlate simulation results with experimental data.

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Data, Models & PDK Contribution

- Generate, curate, and analyze simulation datasets required for compact modeling and PDK integration.
- Contribute component models and performance envelopes to the PDK, with a focus on physical accuracy and manufacturability.
- Define validation metrics and acceptance criteria for component maturity.
- Continuously refine models based on measurement feedback and process evolution.

Requirements

Essential

- MSc or PhD in Photonics, Electrical Engineering, Physics, or a closely related field.
- Proficiency with photonic and multi-physics simulation tools (e.g. Lumerical, COMSOL, HFSS, CST, Tidy3D, or equivalent).
- Solid understanding of the underlying physics of photonic integrated components (optical, RF, Thermal electro-optic effects).
- Comfortable using Python (or similar) for data processing, automation, and analysis.
- Ability to operate in a startup environment.
- Excellent written and spoken English.

Nice to have

- Foundry or industrial experience with PIC platforms.
- Experience with tapeout, DRC/LVS, and design sign-off flows.
- Experience with layout tools and PDK development workflows.
- Hands-on experience with PIC characterization and measurement.

Conditions & Benefits

- Permanent position, competitive salary, performance bonus, ESOP participation.
- Based at CCRAFT's office in Western Switzerland, with flexible hybrid scheme.
- Collaborative, low-hierarchy team, valuing initiative, transparency, and growth.
- Being a core team member in a high-potential startup with global impact and recognition, shaping CCRAFT's design and integration ecosystem.
- Professional development through conferences, training, and industry engagement.

How to apply

Send your application to careers@ccraft.com (email subject: **CAD2602_YourName**) as a **single file CAD2602_YourName.pdf** containing:

- 1-page cover letter outlining what you bring to CCRAFT, what CCRAFT brings to you, and what CCRAFT and you could bring to others.
- 2-page CV with focus on relevant experience.
- Contact details for 2 references.

Application deadline: Feb 10th 2026.

We will evaluate applications as soon as they come in and contact you shortly after your submission.