

## CURRICULUM VITAE

# Ilia Sidorov

R&D engineer: scientific and precision equipment, full cycle – from concept to a working, manufacturable device

● **Open to Head of Product and technical leadership roles**

Quy Nhơn, Vietnam · **open to relocation anywhere**

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## Profile

Broad-profile R&D engineer. I combine optics, mechanics, electronics, software and production engineering to deliver complete hardware systems, and I have taken scientific instruments from requirements and a first prototype through debugging, testing and into use. I connect engineering, production and product to turn complex technology into a working, manufacturable solution. Ready to relocate for the right role, to any country.

## KEY ACHIEVEMENT

### Maskless photolithography system, developed and built solo

Problem statement → Concept → Design → Mechanics → Optics → Software → Production  
→ Assembly → Debugging → Lithography process

- **Industrial components, integrated:** Delta ASDA-A2 servo drives on CANopen, optical linear scales, a TI DLP4710 DMD – ready-made modules joined into one system instead of custom circuitry
- **DFMA throughout:** parts designed around how they are made and assembled; production organised with contractors and suppliers
- **In-house control software:** GDSII import and tiling, die arrays, contrast autofocus, substrate height map, live wafer map
- **Process established:** spin coating, exposure-time sweeps, development; test chips stitched from 1869 exposure fields without visible seams
- **Result:** Prototype 1.0 is a working device that patterns real wafers; Prototype 2.0, a modular sub-micron motion platform, is in design

**Project website:** [iliasidorov.com](http://iliasidorov.com) → **Photos of results:** [design against result](#) →

## Experience

2026 – now

### Founder, lead engineer · Maskless Lithography Solutions

Quy Nhơn, Vietnam

- Brought the maskless lithography system to a working Prototype 1.0 and designed its modular successor
- Preparing the move to production: specifications, partner and investor search, demonstrations

2022 – 2026

### Project Engineer · LLC Abisense

Sochi, Russia · biomedical optical imaging

- Fluorescence tomography device: development, then oversight of serial production
- Scientific instruments from requirements and prototype to debugging, testing and implementation

2022 – 2026

### Mechanical Engineer · Nanobiotechnology Laboratory, MIPT

Moscow Institute of Physics and Technology, Moscow

- Optical and microscope subsystems for a research programme in genomic technologies and optogenetics
- A prototype setup for controlled photoactivation of micro-samples, and its testing

2021 — 2023

## Sirius University of Science and Technology

Sochi, Russia · Nanobiomedicine

— Research Laboratory Assistant, then Junior Specialist

### Also built

- Fluorescence microscopes and a histological slide scanner: motorized stage, autofocus, height map, image stitching
- A first maskless lithography stepper: about 500 nm lateral resolution, a  $\sim 2 \times 2$  mm field; microfluidic devices made on it
- A setup for selective photoactivation of neurons and cell cultures, based on that stepper; supervised its build, and it supported a graduate student's thesis defence
- Engineering software: a Fusion 360-style workbench for FreeCAD, an open-source bridge that lets an AI agent drive Fusion 360, layout tools for GDSII
- Co-author of a paper in a Web of Science journal and four abstracts at the 65th MIPT Scientific Conference

### Competencies

|                           |                                                                                                                                                     |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Full R&amp;D cycle</b> | Idea, calculation, design, prototype, assembly, debugging, software, process                                                                        |
| <b>Engineering</b>        | Optics, precision mechanics, system integration of industrial components, programming, automation                                                   |
| <b>Production</b>         | DFMA, production organisation, work with contractors and suppliers, CNC machining, establishment of technological processes                         |
| <b>Domains</b>            | Scientific instrumentation, microscopy, tomography, lithography, microfluidics, biomedical tasks                                                    |
| <b>Tools</b>              | Fusion 360, SolidWorks, Autodesk Inventor, FreeCAD; Python, PySide6 / Qt, OpenCV; CANopen servo drives, Arduino, PLCs; Microsoft Project, Six Sigma |

### Education

#### Master's degree, Applied Mathematics and Physics

Moscow Institute of Physics and Technology (MIPT), Phystech  
School of Biological and Medical Physics, biology track

#### Bachelor's degree, Applied Informatics

National Research University of Electronic Technology (MIET),  
Moscow · 2013 — 2017

### Languages

#### Russian

native

#### English

intermediate

Details, photos and videos of every project: [iliasidorov.com](https://iliasidorov.com) · [iliasidorov.com/portfolio](https://iliasidorov.com/portfolio)