

Company Profile 2026

OPTOELEC Co., Ltd. |

Future of AI Semiconductor and Robot Era to Open with Photonics Technology

In the era when AI and robots change the world,
at the center is photonics technology that controls PHOTON!



A blurred background image showing a person's hands typing on a laptop keyboard, with the laptop screen and the person's torso visible in the background.

01

COMPANY OVERVIEW

General Detail



World's Best **Wafer Level Optics** Specialist

CEO	Lee Jun Yeok
Sales	US \$7.2 M
Capital	US \$0.4 M
Employees	50 people



Headquarter & WLO FAB located in Siheung-si, Gyeonggi-do



2016
Foundation
2016. 8. 18

2017
SSANGYOUNG Motors
M.P of Automotive Lighting

2018
LIDAR WLO
Investing in WLO

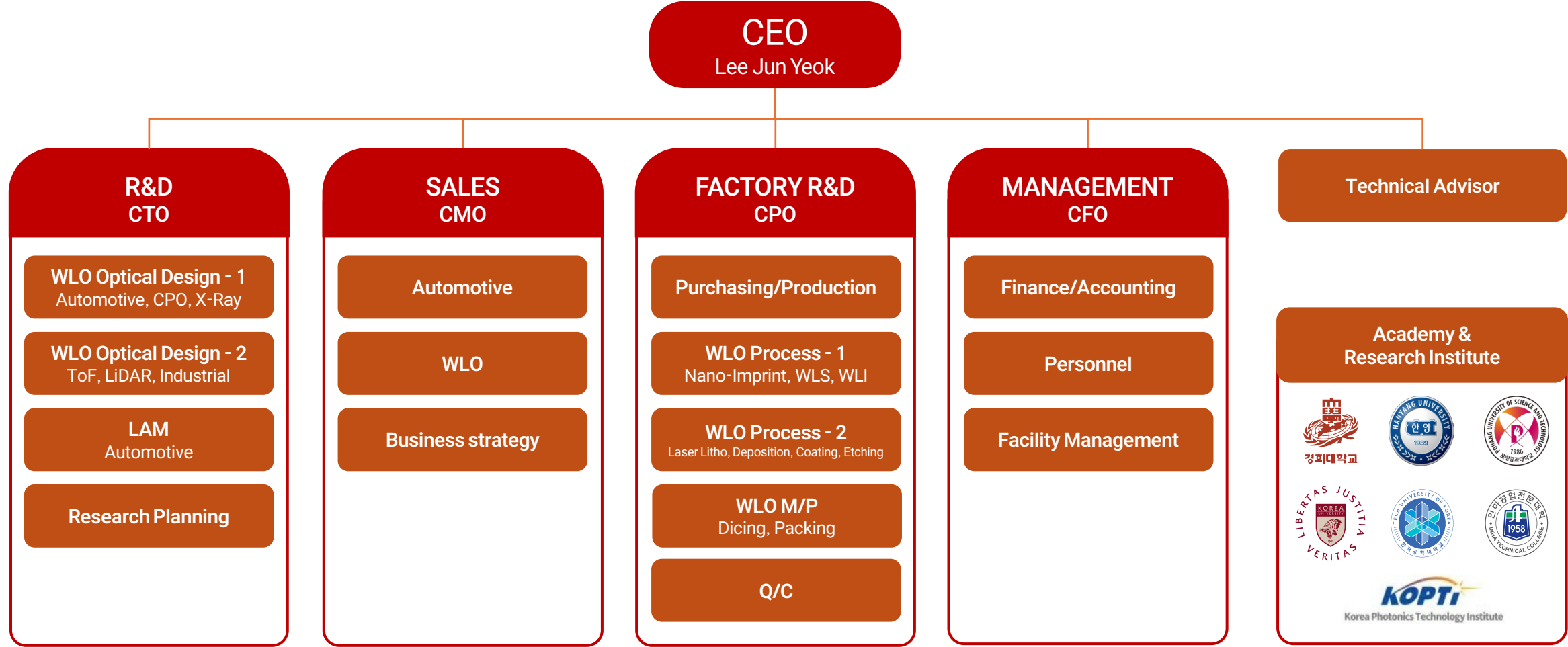
2020
KIA Motors
M.P of Automotive Lighting

2021
WLO
Development for
Automotive

2023
IATF 16949
Baby Unicorn in Korea
Scale-up Tips

2025
Selection of key
national strategic
technologies

Organization



Mass Production Stability



Reduce lead time and minimize supply and demand risks
by having its own FAB and internalizing core processes

Achieving overwhelming productivity and cost reduction per chip through wafer-level mass production process

Proven quality management system
with Class 100 semiconductor class cleanroom operation and IATF 16949 certification

02

BUSINESS

Wafer Level Optics / Automotive Lighting



Business Model



Wafer Level Optics Tech & Vision



Automotive Lighting

Wafer Level Optics



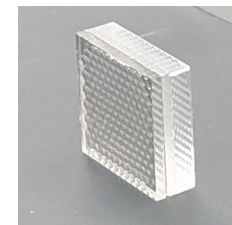
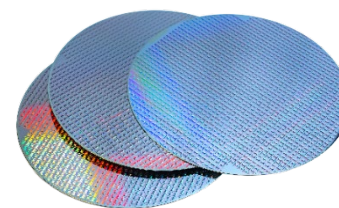
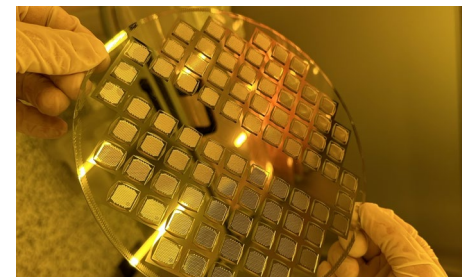
Interior Light

Starlight, Interior Lighting (with MLA)



Exterior Light

Carpet, Signal, Headlamp (with MLA)



Wafer Level Optics

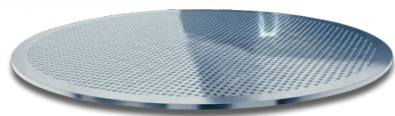
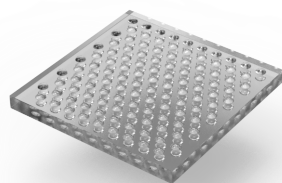
Single/Double Side MLA(Micro Lens Array)
DOE(Diffractive Optical Element)
MPA(Micro Prism Array)

Business Model : Wafer Level Optics

All about WLO | One-Stop Fabrication from Design to Manufacturing

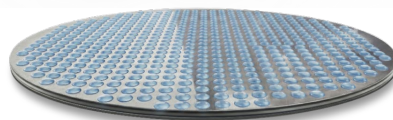
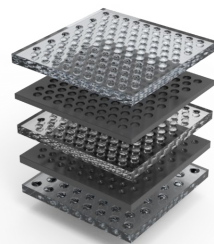
WLO

(Wafer Level Optics)



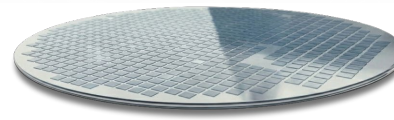
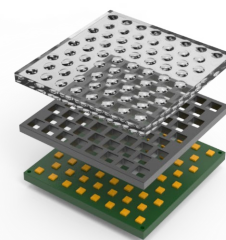
WLS

(Wafer Level Stacking)

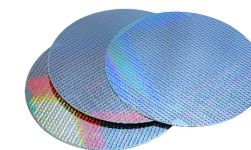


WLI

(Wafer Level Integration)



Photonics Foundry Service

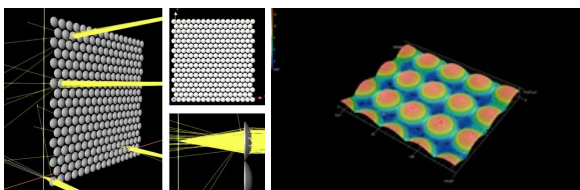


WLO : Wafer Level Optics

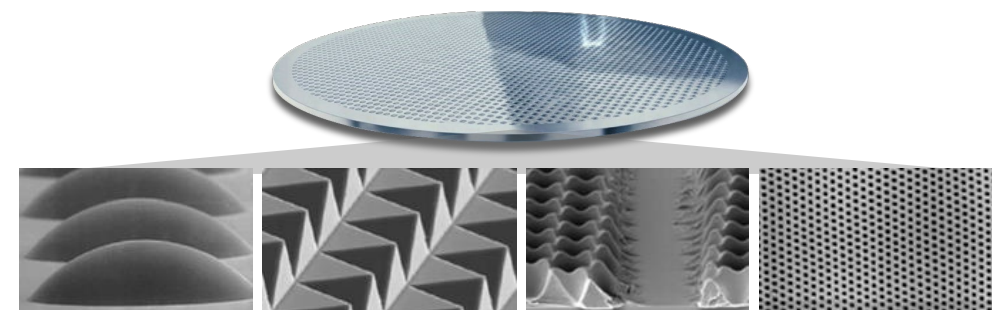
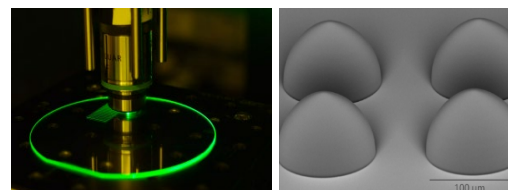


Nanoscale photonics device based on semiconductor process that can be mass-produced Technology for creating **ultra-precise shapes**

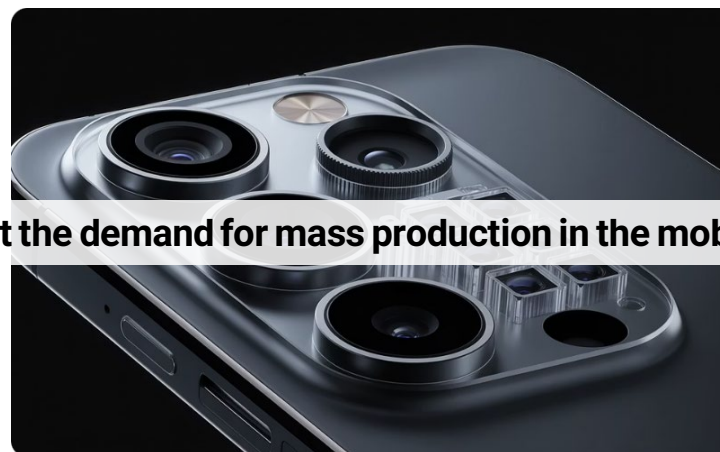
'Autonomous Engine' Design Technology



AI process optimization solution



Mobility



Smart Device

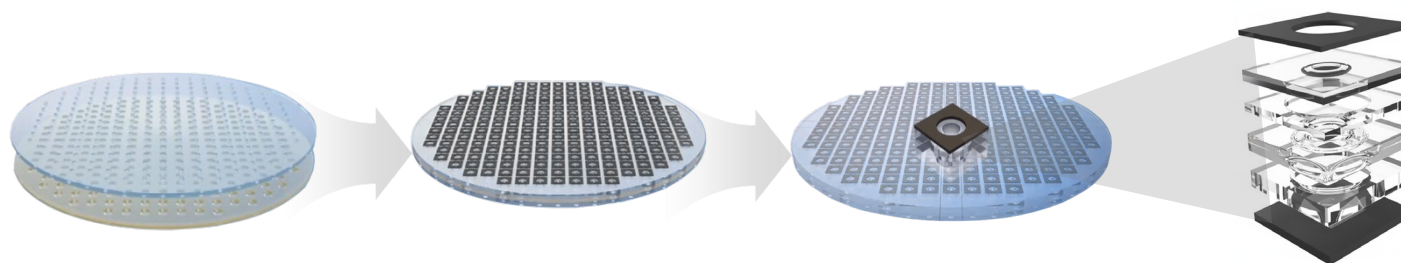


AR/VR

OPTOELEC is ready to meet the demand for mass production in the mobility, mobile and AR markets

WLS : Wafer Level Stacking

Multi-element stacking, performance enhancement **ultra-precise stacking** technology



Ultra-precise Active Alignment
Micro camera module **less than 1mm**
Humanoid **Multi-modal** Sensing



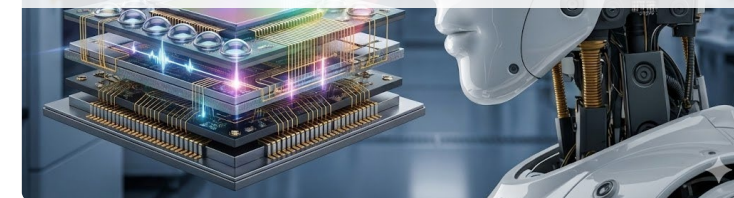
Furthermore, ultra-small stacking technology has solved the technical challenges of the high-performance sensor market



Image Sensor



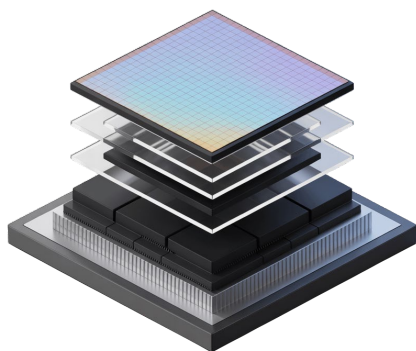
ToF·LiDAR



Humanoid Sensor

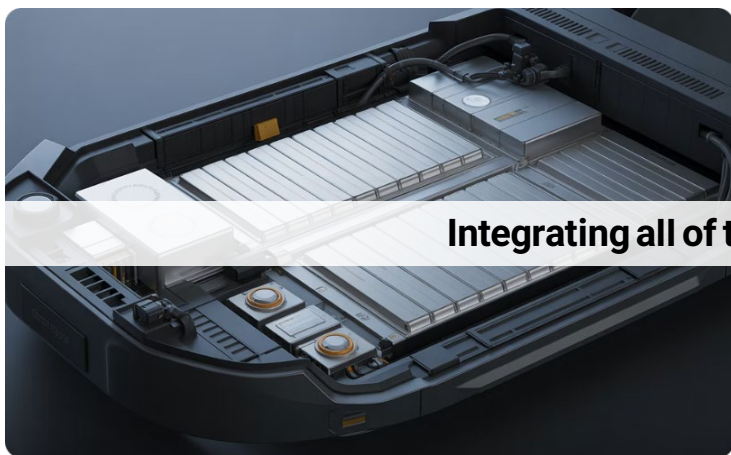
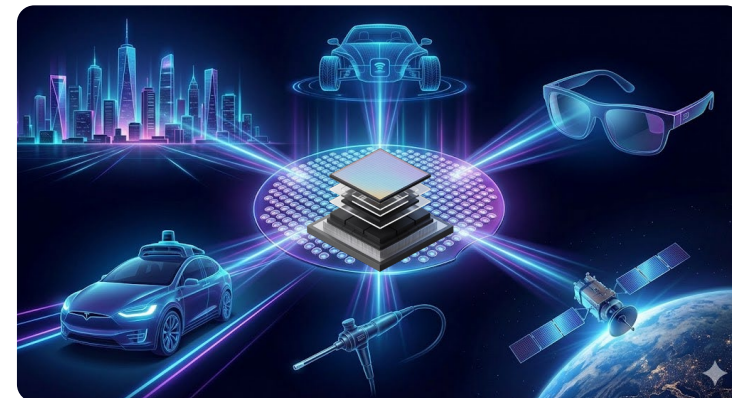
WLI : Wafer Level Integration

A technology that **combines modules** and photonics devices to provide a solution in the form of a finished product



Game changer in the module market
Photonics - Sensor/Light source module fully coupled
Wafer Level *SiP Solution

* SiP : System-in-Package



Battery



Bio & Medical



Aerospace

Integrating all of this, it's positioned as an essential partner for future core industries

Foundry Service

Mastering Phase

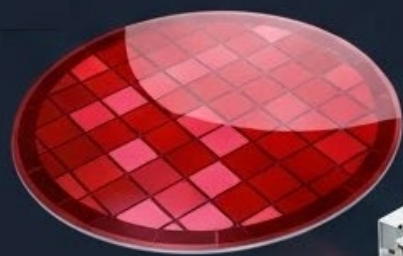
PR / Laser Litho



Master Mold



Development

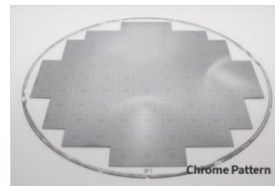


Gray Scale
Laser Direct Lithography



Mass Production Phase

Nano Imprinting



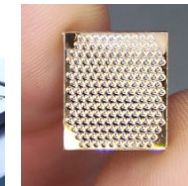
Dicing



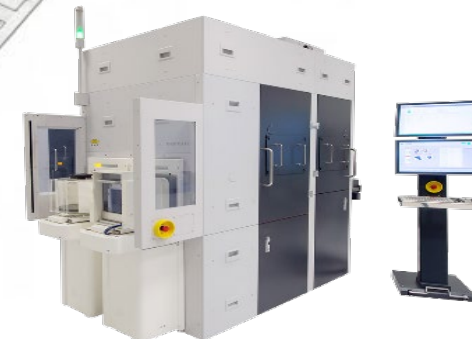
Inspection



Packing



Nano Imprinting



Foundry Service



Spin Coating



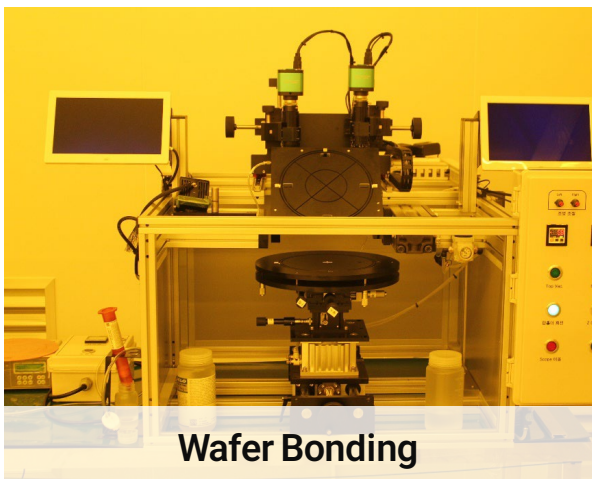
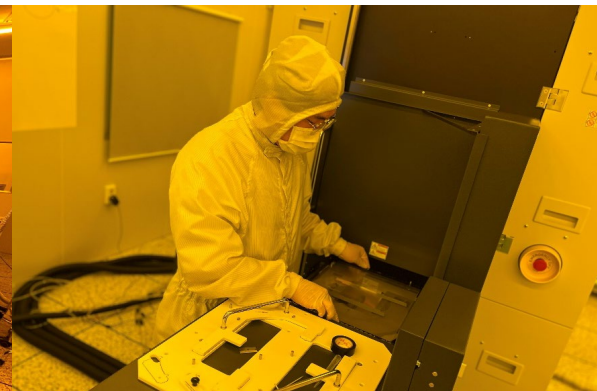
Laser Lithography



Development



Nano Imprinting



Wafer Bonding



Dicing

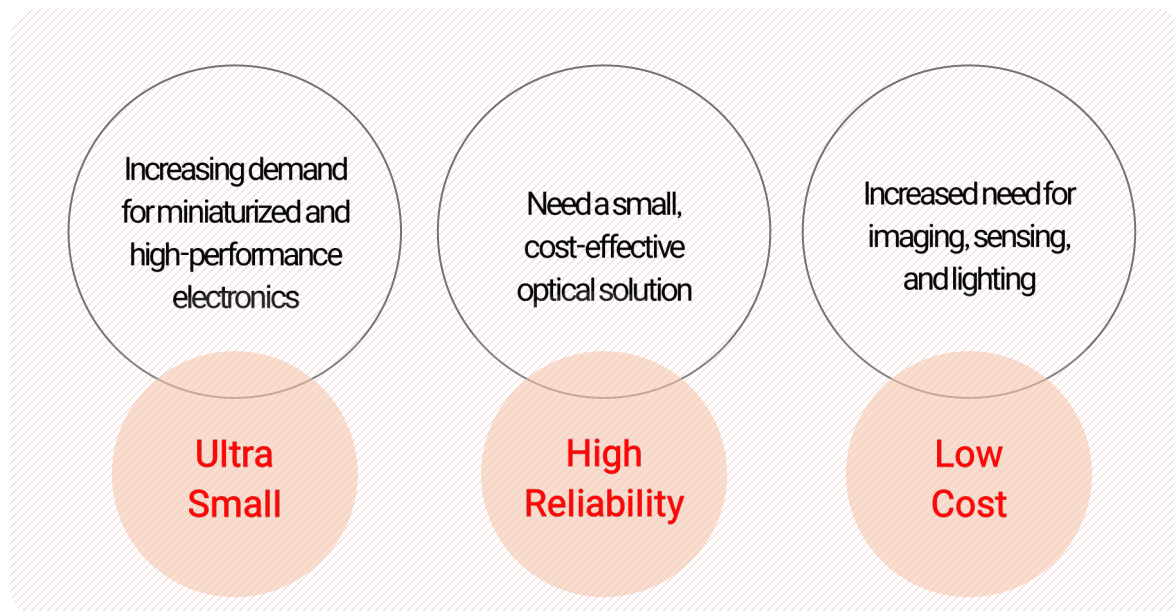


Inspection



WLO Technology

Advantages of WLO Developed as Major Processes of Semiconductors



The only technology that can use wafer semiconductor processes to manufacture high-quality, ultra-small, precision optical components at low cost

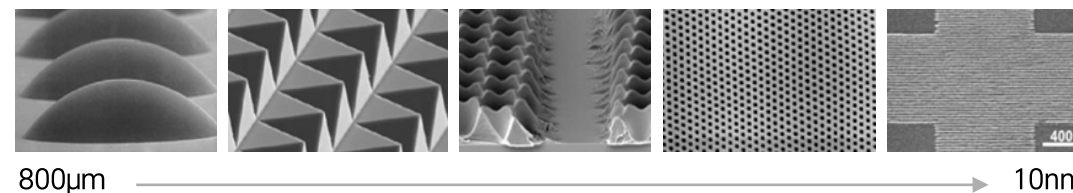
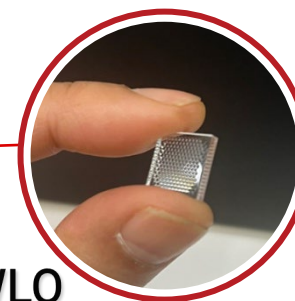
WLO (Wafer Level Optics)



OPTOELEC's WLO

It enables the miniaturization of optical components, enabling smaller and more sophisticated electronic components to be developed

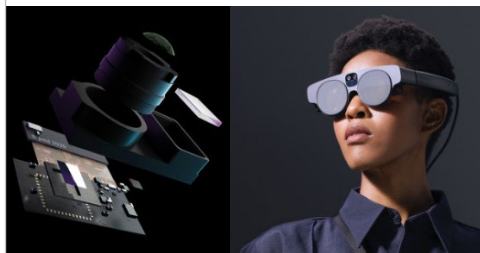
Integration into a single wafer reduces costs and improves performance



WLO Technology for AI-Smart Device

Sensor & Display for Smart Device

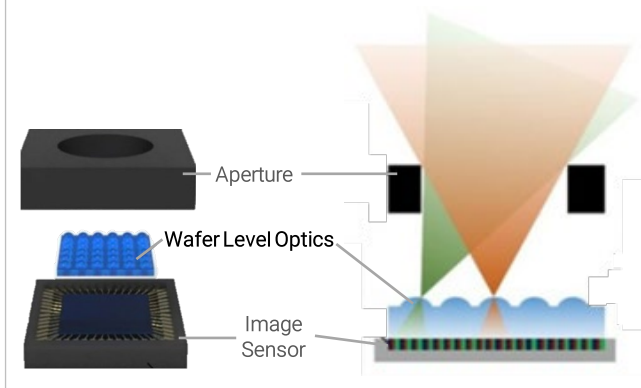
AR / XR



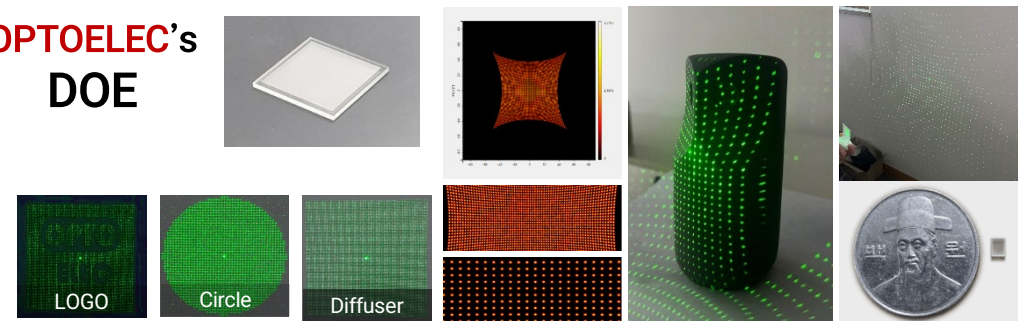
3D ToF Camera



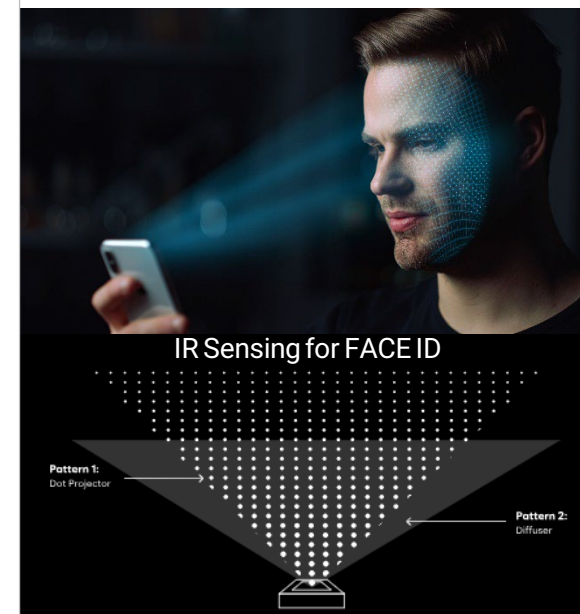
Image Sensor



OPTOELEC's
DOE



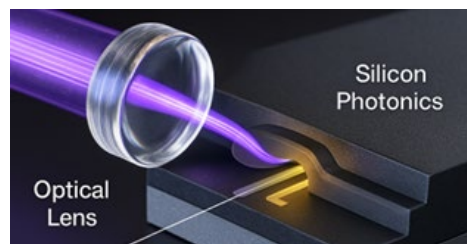
DOT Projector



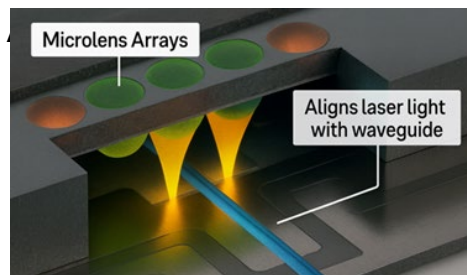
WLO Technology for Silicon Photonics

Silicon Photonics Optical I/O Core Components

Micro Optics

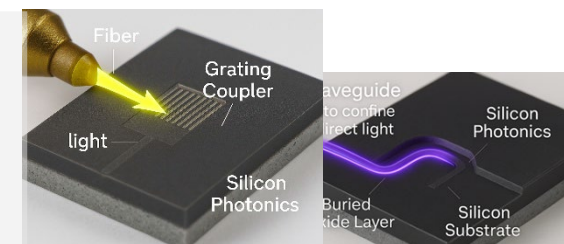


Micro Lens

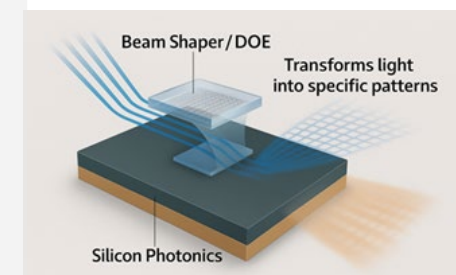


Silicon Photonics

Grating Coupler / Wave Guide



Beam Shaper / DOE



Business Model : Automotive Lighting



Star Light



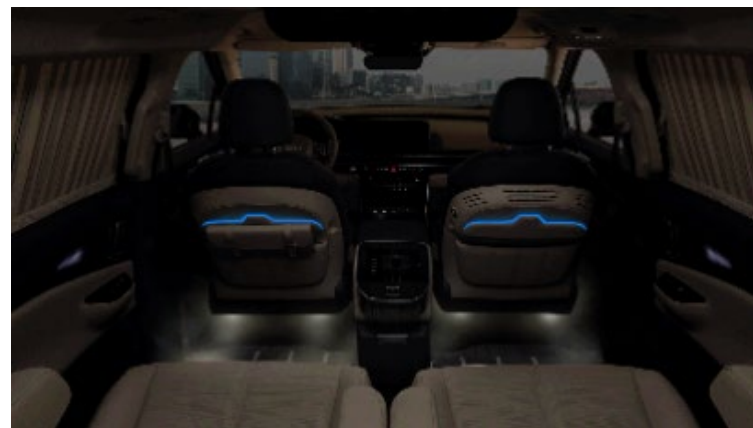
Room Lamp



Dynamic Ambient Light



Pattern & Dynamic Lighting Function

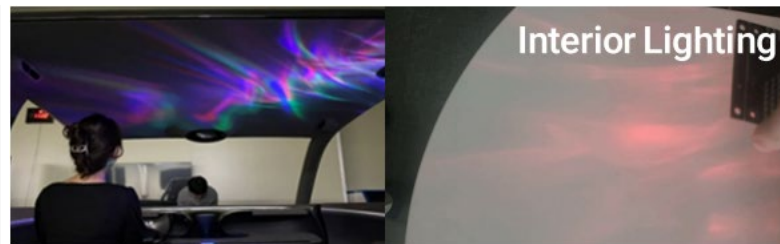
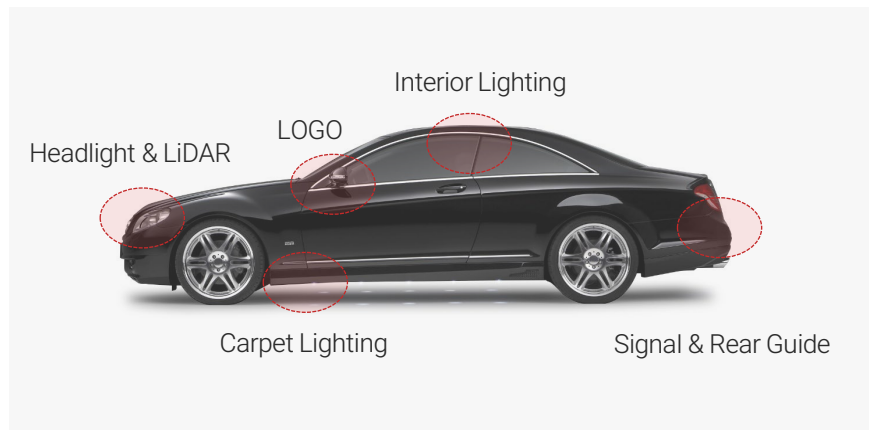


Seat Ambient Light



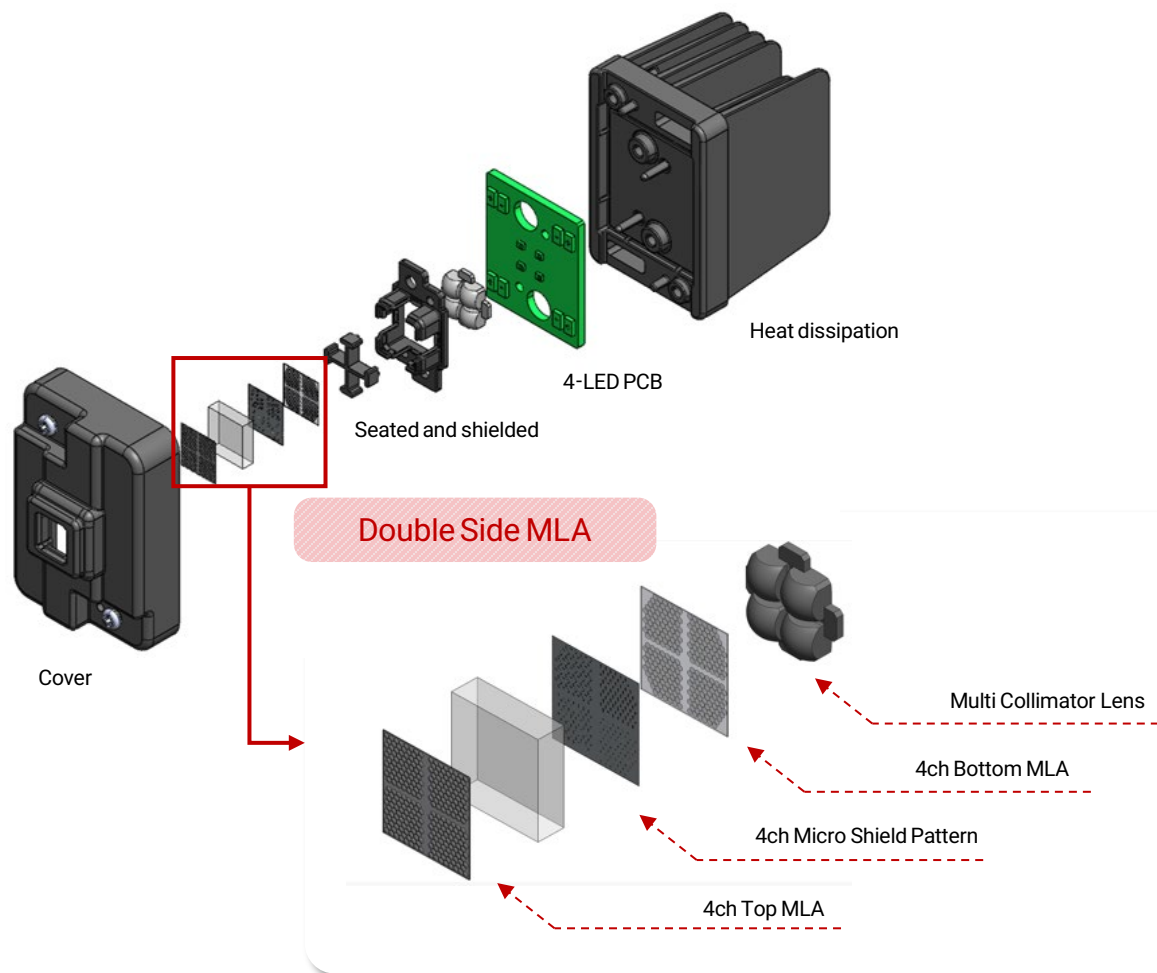
Logo Lamp

Business Model : Automotive Lighting with WLO



Technology for Automotive Exterior Lighting with WLO

Development of Image Floating Optical System through Double-Sided MLA(Micro Lens Array)



Application of specialized WLO junction module technology

- Aspherical WLO for Aberration Improvement
- Pattern Design for Floating Image Implementation
- Pattern offset design for focal uniformity
- Imprinting precision



03

FACTORY

WLO FAB / Assembly Line / Development Process



Wafer Level Optic FAB

World's Best Semiconductor Equipment and Process Infrastructure



Gray Scale Laser Direct Lithography



NANO Imprinting (Smart NIL)

Taylor Hobson PGI Optics Pro

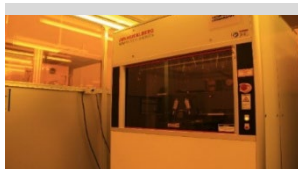


ZYGO Newview 9000



Master

PR / Laser Lithography +



2 Laser Lithography operations

Master Mold



Development



Imprint

Nano Imprinting +



2 Imprinting 2operations & Set to 12"

Dicing

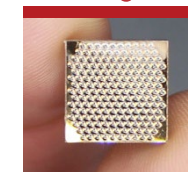


Inspection +



Operation of new ultra-precise inspection equipment

Packing



Assembly Line



Assembly

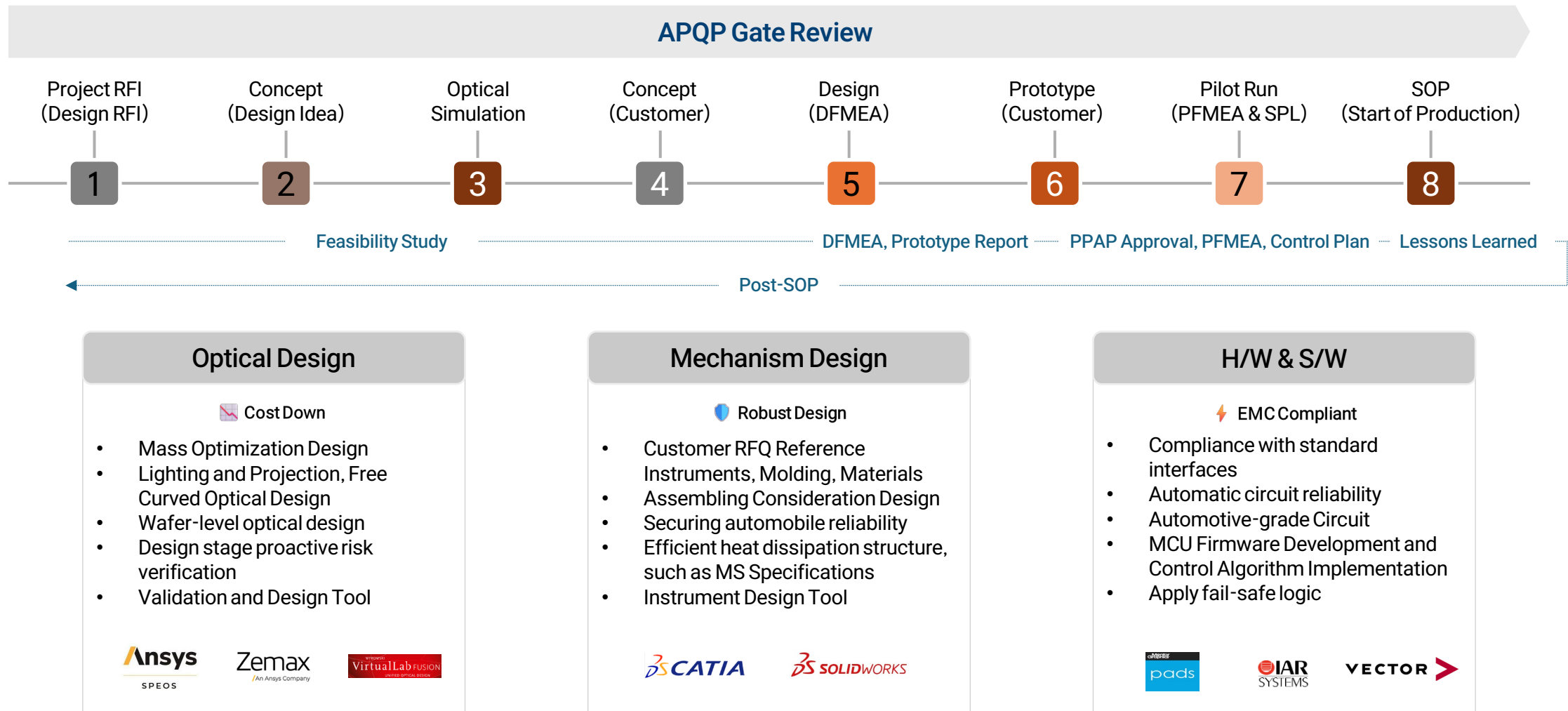


Starlight Assembly

Category		LINE	CAPA
A'ssy	Automotive	3 Line (Custom Line Setup)	30K/month
	Starlight	1 Line	1K/month
	Etc.	2 Line (Line Set up on '26.05)	20K/month

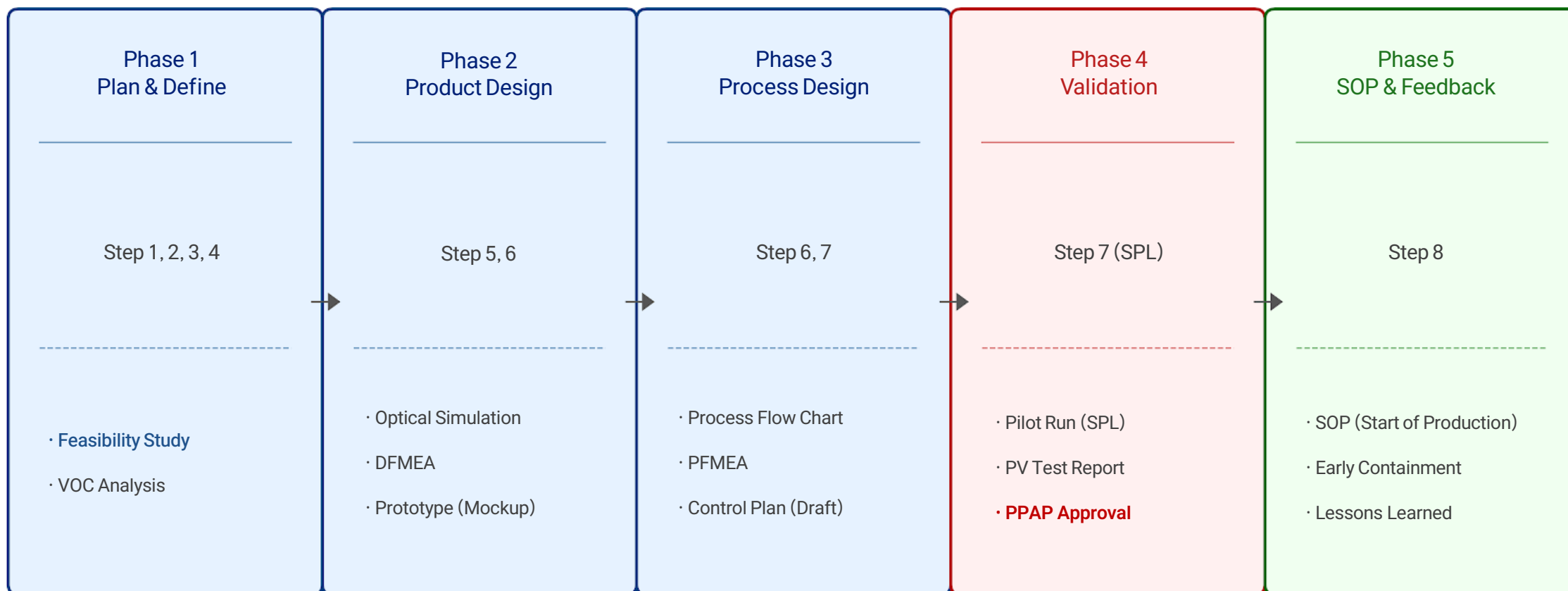
Development Process

Development Step & design



Development Process

Alignment with **APQP Press**



← Continuous Improvement & Feedback Loop (Post-SOP) →

INVESTING IN GROWTH, MAXIMIZING POTENTIAL.

THANK YOU.