PhotonDelta Global SiN Map

Very low propagation loss, high power handling, a broad spectral coverage and CMOS compatibility. There are many reasons why Silicon Nitride (SiN) is the ideal platform for integrated photonics applications such as lidar, biosensing and quantum processors. The Global SiN value map presents the value chain for Silicon Nitride (SiN) photonic integrated circuits and affiliated applications.

PDK Building block development

UTwente (NL)
EPFL (CH)
Ugent (BE)
AIM photonics (US)
Georgia Tech (US)

Corporate PIC Design & Test & PDK development

Corporate structural Software
Synopsis (NL)
Cadence (US)
Nazca design (NL)

Design & Test
Bright Photonics (NL)
VLC Photonics (ES)
Synopsis (CA, NL)
Siemens EDA (US)
Scintil Photonics (FR)

LUCEDA Photonics (BE)
VPI Photonics (DE)
Compoundtek (SG)
Optiwave
Photon Design (CN)
Quantopticon (UK)
ETSC Europe (BE)
EHVA Photonics (CA)
VTEC (NL)
Silvaco (UK, US, JP)
Keysight (US)
Photonpath (IT)

PIC design

Universities
UTwente (NL)
Ugent (BE)
TUBerlin (DE)
KIT (GE)
EPFL (CH)
MIT (US)
Uvalencia (ES)
Sant'Anna School of Advanced Studies (IT)
PNTLab (IT)
DTU (DK)

C2MI (CA)
Laboratory of Solid-State
IPL (US)
SKOLTEC (RU)
AIP (DE)
ISSP UL (LAT)
UCSD (US)
University Warsaw (PL)

Public Private
EASA (EU)
NASA (US)

Foundries

Public-private / Research institute
CEA-Leti (FR)
CMP (FR)
IMEC (BE, NL)
IMB-CNM (ES)

University
IPL (US)
MESA+ (NL)

Corporate
Lionix International (NL)
Ligentec (CH)
Towersemi (IL)(Intel)
AMO (DE)
VTT (FI)
SiPhotonic technologies (DK)
Applied Nanotools - ANT (CA)
Advanced Micro Foundry (SG)
XFAB (DE)
ST (CH)

Packaging

Corporate
Phix (NL)
Ficontec (DE)
Argotech (CZ)
Teramount (IS)
Etteplan (NL,FI)
Salland (NL)
IMS (NL)
Microalign (NL)
Bruco-ic (NL)

Research Institute
Tyndall NI (IE)
AIM Photonics TAP Facility (US)
CITC (NL)
TNO (NL)

+ vertical integrators

& more

Module vendors**

** Companies listed above are just an example; this list is not exhaustive.

Corporate
LioniX International (NL)
IMEC IClink (BE)
Lightwave logic (US)

Aeponyx (FR)
Anellophotonics (US)
IPITEK (US)
Indigo Diabetes (BE)
iPronics (ES)
ST (CH)

Surfix Diagnostics (NL)
Phoenix Photonics (UK)
Nostics (NL)
Delta Diagnostics (NL)
Deepsight (US)
Finisar/II-VI (US)

Xrnanotech (CH)
Brolis semiconductor (LT)
Velodyne (BE)
AOSense (US)
Deeplight (CH)
Chilas (NL)
Quantopticon (UK)

Aggregators

Jeppix (NL)
EPIXFAB (BE)
CMP (FR)
Cornerstone (UK)

Manufacturing technology

IMEC (BE, NL)
TNO (NL)
C2N (FR)
IMB-CNM (ES)
AIM Photonics (US)
Fraunhofer (DE)
COMMSCOPE (BE, INT)
LAM (US, AU, KO, TW)
Sandia National laboratories (US)

Hitachi (CN)
Applied (JP)
ASMI (NL)
ASML(NL)
AIXTRON (FR)
Solmates (NL)

Auxiliary technology - materials

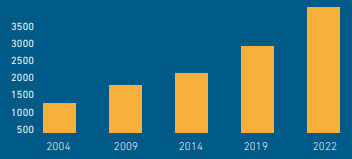
Chromosol (UK)
Soitec (FR, ID, JP)
Materize (LV)
SRIM (CN)

Research institute
IHP (DE)

Metrology PIC quality

Luna inc. (US)
EXFO (US, UK, FR, MX)

Locations of SiN value chain companies (% per continent)



Published SiN Waveguide patents (on average per year)*

*Global analysis of Silicon nitride waveguide patents 1 January 2000 until the end of April 2022 (source: Lens.org – no subselection on companies).