



PRESS RELEASE

A comprehensive survey of usage and markets for: GaAs, GaP, InP, SiC, Sapphire and bulk-GaN

Compound Semiconductor Substrates 2010 Report

June 7, 2010 – Yole Développement released its new markets & technological study dedicated to compound semiconductor substrates. In this report, the company announces that sapphire will exceed 50% of the compound semiconductor substrates processed surface.

Yole Développement analyses the CS materials market, the projection in 2013 and beyond. The report describes the current developments and new innovations. For each material, GaAs, GaP, GaN, SiC, InP and Sapphire, it provides the main targeted devices and related market size.

Yole's analysts list the main material suppliers (merchant and captive) with product description and market shares. They also analyze the main material users, the related products. The report presents the substrate market value and volume (\$, units, Msq.in.), split by diameter and electrical specs (Semi-conductive, semi-insulating) in the 2008-2013 time frame.

In 2011, sapphire will exceed 50% of the CS processed surface

Silicon largely dominates the semiconductor business as the reference material. However, specific applications such as optoelectronics, RF or power electronics require material properties that cannot be offered by silicon.

GaAs, GaN, GaP, GaAs, InP, SiC and Sapphire substrates now account for 1.1% of the 7,504 million square inches annually processed in semiconductor foundries. However, that small portion of processed area is compensated by a higher merchant price leading to a \$880M raw substrate market size in 2009 and reaching the billion dollar threshold in 2010.

Up to now, GaAs was the leading material in volume thanks to the wireless technology and red / orange / yellow LED demand, but sapphire will take the lead from 2011 driven by the booming business in white LED for LCD backlight and general illumination.

These materials have been protected from silicon competition because they allow device performance not reachable by THE semiconductor material (Frequency, power, thermal conductivity, robustness, junction temperature, voltage breakdown...). Even though compound materials have market prices dramatically higher than Si, Technical Specs have been, and will remain, the main driver for the adoption of these CS substrates and related technologies. All the considered materials are now available in a 4 inch format except bulk GaN that has just been released in 3 inch in Japan. This diameter expansion helps to lower the manufacturing cost of CS-based devices and to mass market affordable products.

This new report offers a unique panorama of the compound semiconductor substrate business in a single package. It highlights the main metrics and the key market trends that will help material and equipment vendors to position their R&D efforts and anticipate the changes and forecasted evolution of their business.

Companies listed in this report

Acme Corporation, AdTech, Agility, Alpha Crystal, Alphion, Ammono Sp, Anadigic, AOI, Avago, Avanex, AWSC, AXT, Bookham, Bridgestone, ComSeCore, Cotomat, Covega, Cree, Crysband, Crystal Applied Technology, Crystal On, Crystal Photonics, Crystal Q, Crystalwise, Cyoptics, Denselight, Denso, Dow Corning, Dow, Elma Malachit JSC, Epistar, Epiworks, Eudyna, Exiton, Finisar, Freiburger, Fujitsu, Furukawa, GCS, GE, GigaCom, Goldeneye Inc.,

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Hitachi (OpNext), Hitachi Cable, Hittite Microwave, HRL, II-VI, Iljin Display, Infinera, Inlustra Technologies LLC, InPACT, IntelliEPI, Intexys Photonics, IQE, JDSU, Juropol, Kopin, Kyma, Kyocera, Lumileds, LumiLOG, M/A-Com, Magnachip, Mimix Broadband, Mitsubishi Chemical, Mitsubishi Electric, MJ Corporation, Modulight, Monocrystal PLC, Multiplex, Namiki, NanoGaN Ltd., N-Crystals, NEC, Neomax, NeosemiTech, Nikko Materials / Acrotec, Nippon Steel, Norstel, Northrop Grumman, NTT, OKI, OMMIC, Ostendo, Oxford Inst. / TDI, PAM Xiamen, Panasonic, Peregrine, Phostec, Picogiga, Renesas, RMD, Rohm, Rubicon, Saint-Gobain Crystals, Samsung-Corning, Santur, Sapphicon, Sapphire Technology, SEH, Sensor Electronic Technology: SET, Shinkosha, Showa Denko, Si-Crystal, Silian, Sino American SAS, Skyworks, Sony, Soraa, Inc., Sumika, Sumitomo Electric SEI, Sumitomo Metal Mining, Svedice, TankeBlue, Tera Xtal Technology, Thales, TOPCO Scientific, TopGaN, TriQuint, UCSB, UMS, Unipress, Vitesse, VPEC, Wafer Tech. / IQE, Wafer Works, Win Semi, Xiamen Powerway, Xindium.

Authors

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Compound Semiconductor Substrates report

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For special offers and price in dollars, please contact David Jourdan (jourdan@yole.fr or +33 472 83 01 90).

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Other publications dedicated to the Compound Semiconductors Industry

SiC Market Report – 2010 Edition

The detailed major market metrics of the current and projected SiC device and substrate business, describing the targeted applications, the key players, the supply-chain, the volumes and related market size of each segment...

Sapphire Report – 2010 Edition

A complete analysis of the 2 main applications targeted by the sapphire substrates along with key market metrics. It describes the involvement of the major material suppliers and gives a snapshot of the sapphire industry playground.

Green Laser Market for Projection Devices - 2010 Edition

Direct and indirect emitting semiconductor green laser diodes market, industry and technology analysis

LED CoSim+ - 2009 Edition

Evaluate the manufacturing cost of LED devices with our comprehensive cost analysis tool. A powerful tool designed for the power electronics community.

About Yole Développement

Created in 1998, Yole Développement is a market research and strategy consulting firm analyzing emerging applications using silicon and micro manufacturing. With 20 full time analysts tracking MEMS, Microfluidics, Compound Semiconductors, Power Electronics, Photovoltaic, Advanced Packaging and Nanomaterials, Yole Développement supports companies and investors worldwide to help them understand markets and follow technology trends.

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