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Gallium Arsenide (GaAs) Next Generation Semiconductors, Market Shares, Market Forecasts, Market Analysis, 2020-2026

Gallium Arsenide (GaAs) Components: Ride the Wave of 5G

Mountains of Opportunity

Picture by Susan Eustis

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CHECK OUT THESE KEY TOPICS

GaAs Gallium Arsenide Components Next Generation Semiconductors 3D Sensing in Lidar	Lasers 3D Sensing in Consumer Electronics 3D Sensing in Autonomous Vehicles	Optical Infrastructure Optical Datacenters 4G Remote Radioheads 5G Beam Forming

Gallium Arsenide Components: Next Generation Semiconductors

Gallium Arsenide (GaAs) Next Generation Semiconductors

LEXINGTON, Massachusetts (February 26, 2020) – WinterGreen Research announces that it has a new study on Gallium Arsenide (GaAs) Next Generation Semiconductors, Market Shares, Market Forecasts, Market Analysis, 2020-2026. The 2020 study has 212 pages, 116 tables and figures. GaAs represents next generation semiconductors, a market that is $500 billion dollars in 2020.

Next generation GaAs semiconductors promise to bring a huge market, not totally replacing the existing semiconductor market, but ultimately making a huge dent in it. The ability to replace silicon semiconductors, a market that is $500 billion dollars in 2020 makes one sit up and take notice. The existing silicon semiconductor market is pretty good size for a market that barely existed in 1975. Next generation GaAs support the signal speed that is needed to implement 5G.

GaAs works in a way that silicon cannot. The potential for the next generation GaAs wafers is staggering, with the overall semiconductor market likely to surpass $20 trillion by 2026 as the new industrial revolution takes hold and 5G supports IoT that connects all things together.

Once economies of scale are realized these semiconductor GaAs markets are expected to really take off. The sheer size of the global semiconductor market at $500 billion dollars in 2020 shows that the potential for a next generation semiconductor technology is truly exciting. The gallium arsenide wafers are next generation technology because they operate faster than the silicon semiconductors, they support a new, faster network called 5G.

Gallium arsenide GaAs represents the next generation of semiconductor chips because the chips can do things that the silicon chips cannot do. GaAs does have a considerably higher bandgap than silicon. It is a direct band gap semiconductor with a zinc blende crystal structure.

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Sensing for autonomous and electric vehicles is one use of the technology. 3D Sensing for consumer electronics and use for lasers is common. Units are used in radar and lasers. The benefits of using GaAs in devices derive in part from the characteristic that GaAs generates less noise than most other types of semiconductor components. As a result, it is useful in weak-signal amplification applications.

Due to these benefits related to generating less noise, GaAs is a suitable replacement for silicon in the manufacture of linear and digital ICs. A gallium arsenide wafer is also known as Gallium arsenide substrate. Economies of scale for gallium arsenide promise to make the technology viable.

Silicon commercial advantage is that it is a thousand times cheaper to make. As we move into the 5G era, that advantage will dissipate because of the volume of GaAs components that are made to meet demand permitting vendors to leverage economies of scale. Gallium arsenide material technical advantages over silicon are that electrons race through its crystalline structure faster than they can move through silicon. Cellphones, typically rely on speedy gallium arsenide chips to process the high-frequency radio signals that arrive faster than silicon can handle.

Unlike silicon cells, Gallium Arsenide cells are relatively insensitive to heat. Alloys made from GaAs using Al, P, SB, or In have characteristics complementary to those of GaAs, allowing great flexibility. GaAs is very resistant to radiation damage. This, along with its high efficiency, makes GaAs very desirable for space applications. GaAs biggest drawback is the is the high cost of a single-crystal GaAs substrate which has been a barrier to volume manufacturing.

GaAs markets at $3.8 billion in 2020 promise to grow to $22 billion by 2026. With the opportunity to participate in the 5G next generation semiconductor markets. Gallium arsenide components will achieve broad economies of scale, making them far more affordable and more available.

WinterGreen Research is an independent research organization funded by the sale of market research studies all over the world and by identifying next generation technology. It is next generation technology that drives market growth. The company has 35 distributors worldwide, including Global Information Info Shop, Market Research.com, Research and Markets, Report Linker, and Electronics.CA,.

WinterGreen Research is positioned to help customers facing challenges that define the modern enterprises. The increasingly global nature of science, technology and engineering is a reflection of the implementation of the globally integrated enterprise.

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Customers trust wintergreen research to work alongside them to ensure the success of the participation in a particular market segment.

WinterGreen Research supports various market segment programs; provides trusted technical services to the marketing departments. It carries out accurate market share and forecast analysis services for a range of commercial and government customers globally. These are all vital market research support solutions requiring trust and integrity.

Keywords: GaAs, Gallium Arsenide Components , Next Generation Semiconductors, 3D Sensing in Lidar, Lasers, 3D Sensing in Consumer Electronics, 3D Sensing in Autonomous Vehicles, Optical Infrastructure, Optical Datacenters, 4G Remote Radioheads, 5G Beam Forming,

Companies Profiled

Market Leaders, Dollars

Sumitomo Electric
II-VI Incorporated
IQE Corporation
Freiberger Compound Materials
AXT
China Crystal Technologies
Shenzhou Crystal Technology
Tianjin Jingming Electronic Materials
Yunnan Germanium
DOWA Electronics Materials

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Selected Companies Profiled Participating in the Gallium Arsenide Semiconductor Industry

Advanced Wireless
Semiconductor
Anadigics / GaAs Labs
Avago Technologies
BWT
Cree Billion Dollar
Commitment to SiC Mosfets
Hanergy Holdings /
AltaDevices

Hittite Microwave
M/A-COM Technology
Solutions
Murata Manufacturing
Qorvo
RFMD
Skyworks Solutions
Tianjin Jingming Electronic
Materials

Texas Instruments:
LMG3410R050 GaN Device
TriQuint Semiconductor Inc
Yunnan Lincang Xinyuan
Germanium Industry Co
Umicore
Vishay Gallium Arsenide LEDs
WIN Semiconductors

Gallium Arsenide (GaAs)Worldwide: 100%: Market Shares, Strategies, and Forecasts, Worldwide, 2020 to 2026

Report Methodology

This is the 839th report in a series of primary market research reports that provide forecasts in communications, telecommunications, the Internet, computer, software, telephone equipment, health equipment, and energy. Automated process and significant growth potential are priorities in topic selection. The project leaders take direct responsibility for writing and preparing each report. They have significant experience preparing industry studies. Forecasts are based on primary research and proprietary data bases.

The primary research is conducted by talking to customers, distributors and companies. The survey data is not enough to make accurate assessment of market size, so WinterGreen Research looks at the value of shipments and the average price to achieve market assessments. Our track record in achieving accuracy is unsurpassed in the industry. We are known for being able to develop accurate market shares and projections. This is our specialty.

The analyst process is concentrated on getting good market numbers. This process involves looking at the markets from several different perspectives, including vendor shipments. The interview process is an essential aspect as well. We do have a lot of granular analysis of the different shipments by vendor in the study and addenda prepared after the study was published if that is appropriate.

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Forecasts reflect analysis of the market trends in the segment and related segments. Unit and dollar shipments are analyzed through consideration of dollar volume of each market participant in the segment. Installed base analysis and unit analysis is based on interviews and an information search. Market share analysis includes conversations with key customers of products, industry segment leaders, marketing directors, distributors, leading market participants, opinion leaders, and companies seeking to develop measurable market share.

Over 200 in depth interviews are conducted for each report with a broad range of key participants and industry leaders in the market segment. We establish accurate market forecasts based on economic and market conditions as a base. Use input/output ratios, flow charts, and other economic methods to quantify data. Use in-house analysts who meet stringent quality standards.

Interviewing key industry participants, experts and end-users is a central part of the study. Our research includes access to large proprietary databases. Literature search includes analysis of trade publications, government reports, and corporate literature.

Findings and conclusions of this report are based on information gathered from industry sources, including manufacturers, distributors, partners, opinion leaders, and users. Interview data was combined with information gathered through an extensive review of internet and printed sources such as trade publications, trade associations, company literature, and online databases. The projections contained in this report are checked from top down and bottom up analysis to be sure there is congruence from that perspective.

The base year for analysis and projection is 2019. With 2019 and several years prior to that as a baseline, market projections were developed for 2020 through 2026. These projections are based on a combination of a consensus among the opinion leader contacts interviewed combined with understanding of the key market drivers and their impact from a historical and analytical perspective.

The analytical methodologies used to generate the market estimates are based on penetration analyses, similar market analyses, and delta calculations to supplement independent and dependent variable analysis. All analyses are displaying selected descriptions of products and services.

This research includes referencde to an ROI model that is part of a series that provides IT systems financial planners access to information that supports analysis of all the numbers that impact management of a product launch or large and complex data center. The methodology used in the models relates to having a sophisticated analytical technique for understanding the impact of workload on processor consumption and cost.

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WinterGreen Research has looked at the metrics and independent research to develop assumptions that reflect the actual anticipated usage and cost of systems. Comparative analyses reflect the input of these values into models.

The variables and assumptions provided in the market research study and the ROI models are based on extensive experience in providing research to large enterprise organizations and data centers. The ROI models have lists of servers from different manufacturers, Systems z models from IBM, and labor costs by category around the world. This information has been developed from WinterGreen research proprietary data bases constructed as a result of preparing market research studies that address the software, energy, healthcare, telecommunicatons, and hardware businesses.

YOU MUST HAVE THIS STUDY

Gallium Arsenide (GaAs)Worldwide:

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Gallium Arsenide (GaAs)Worldwide: Executive Summary

The study is designed to give a comprehensive overview of the Gallium Arsenide (GaAs) next generation semiconductor market segment. Research represents a selection from the mountains of data available of the most relevant and cogent market materials, with selections made by the most senior analysts. Commentary on every aspect of the market from independent analysts creates an independent perspective in the evaluation of the market. In this manner the study presents a comprehensive overview of what is going on in this market, assisting managers with designing market strategy likely to succeed.

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WinterGreen Research, research strategy relates to identifying market trends through reading and interviewing opinion leaders. By using analysis of published materials, interview material, private research, detailed research, social network materials, blogs, and electronic analytics, the market size, shares, and trends are identified. Analysis of the published materials and interviews permits WinterGreen Research senior analysts to learn a lot more about markets.   Discovering, tracking, and thinking about market trends is a high priority at WinterGreen Research. As with all research, the value proposition for competitive analysis comes from intellectual input.

WinterGreen Research, founded in 1985, provides strategic market assessments in telecommunications, communications equipment, health care, Software, Internet, Energy Generation, Energy Storage, Renewable energy, and advanced computer technology.

Industry reports focus on opportunities that expand existing markets or develop major new markets. The reports access new product and service positioning strategies, new and evolving technologies, and technological impact on products, services, and markets. Innovation that drives markets is explored. Market shares are provided. Leading market participants are profiled, and their marketing strategies, acquisitions, and strategic alliances are discussed. The principals of WinterGreen Research have been involved in analysis and forecasting of international business opportunities in telecommunications and advanced computer technology markets for over 30 years.

The studies provide primary analytical insight about the market participants. By publishing material relevant to the positioning of each company, readers can look at the basis for analysis. By providing descriptions of each major participant in the market, the reader is not dependent on analyst assumptions, the information backing the assumptions is provided, permitting readers to examine the basis for the conclusions.

WinterGreen Research is positioned to help customers facing challenges that define the modern enterprises. The increasingly global nature of science, technology and engineering is a reflection of the implementation of the globally integrated enterprise. Customers trust wintergreen research to work alongside them to ensure the success of the participation in a particular market segment.

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About The Principal Authors

Susan Eustis, President, co-founder of WinterGreen Research, is a senior analyst. She has done research in communications, healthcare equipment, and computer markets and applications. She holds several patents in microcomputing and parallel processing. She has the original patents in electronic voting machines. She has new patent applications in format varying, mulitprocessing, electronic voting, and oxygen management. She is the author of recent studies of the drone and robot marketing strategies, Internet equipment, biometrics, biomaterials, a study of Internet Equipment, Artificial Intelligence, IoT, Worldwide Telecommunications Equipment, Top Ten Telecommunications, Digital Loop Carrier, Web Hosting, Web Services, and Application Integration markets. Ms. Eustis is a graduate of Barnard College. Ms. Eustis was named Top Woman CEO in 2012 by Who's Who Worldwide. She was named Top Woman Market Research Analyst in 2012, 2013,2014,2015, 2016,2018, 2019, and 2020. She has been twice featured on the cover of the Women of Distinction magazine. She was cited in a recent Time Magazine article and major media articles on Youth Sports market growth. She was also featured in recent Wall Street Journal, New York Times, HBO, and London Times articles. Bloomberg has had several quotes regarding cyber currencies and blockchain recently.

About the WinterGreen Research Team: The WinterGreen Research Team is comprised of senior analysts that prepare the market research and analysis that is offered to the client and developed using an iterative process to achieve a final study. Typical projects include providing market/viability research. The team can look at how drones can be applied to critical infrastructures safety, including: type of market existing, Barriers, Forecast demand and competitors, SWOT and competitive advantages, Price Analysis, product design recommendations (marketing orientation).

Research is typically for many different regions or localities, for example EU countries including Spain, UK, Nordic, Germany, and France. Typical projects profile the United States and areas of Asia. It is common to three representative countries from South America, Brazil, Argentina, Chile, and Mexico. Representative countries from Asia APAC typically include Japan, China, India, and Australia.

Critical infrastructure safety, including: type of market existing, barriers to entry and to faithful execution of product provision, forecast of demand, market share, SWOT, competitive advantage of major competitors, identification of new technologies and new companies, price performance analysis, product design recommendations, and marketing considerations are typical topics covered.

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