Journal of Biochemical Engineering & Bioprocess Technology

Market analysis

15th International Congress on Laser Advanced Materials Processing

Theme: Estimating Future Advancements to be Created and the Future Laser Marketing

Vladimir Rumyantsev

Head of Department, Galkin Institute for Physics & Engineering,Ukraine, E-mail: vladimir.rumyantsev2011@yandex.ru

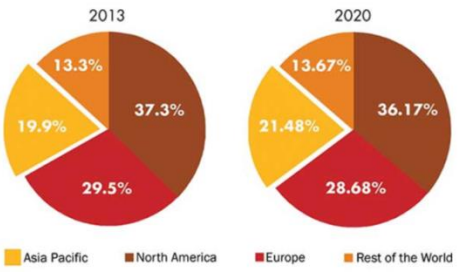
The lasers market is expected to grow at a moderate rate during the forecast period, 2018 to 2023. Asia-Pacific is estimated to lead the market, owing to the growing demand from medical industry. Electronics is estimated to be the largest end-use industry for lasers.

The worldwide laser market will proceed with its intense development in the coming years, as per various reports, the innovation propels industry wide. While this development is occurring around the globe, the Asia-Pacific (APAC) locale is relied upon to see the speediest extension.

Parallel to far reaching mechanical advancement, the laser processing showcase is exhibiting strong development in assembling, broadcast communications and buyer hardware particularly in the APAC area.

A few statistical surveying organizations quality this strong improvement, to progresses in and interest for innovations in the assembling division. Laser parts and frameworks progressively are being discovered and are producing applications. In particular, laser innovation has started supplanting conventional machine instruments in assembling applications, as ease fiber lasers and mechanical pulse lasers are being created.

The anticipated extension in the following quite a long while of telecommunications into the biggest end-utilize segment of the photonics business can be credited to a rising interest for optical filaments. Optical fibres are rapidly ending up more prominent than customary metallic wires, as they exhibit more prominent wellbeing and security, media communications and data innovation is inciting new advancements in locales, for example, China and India.



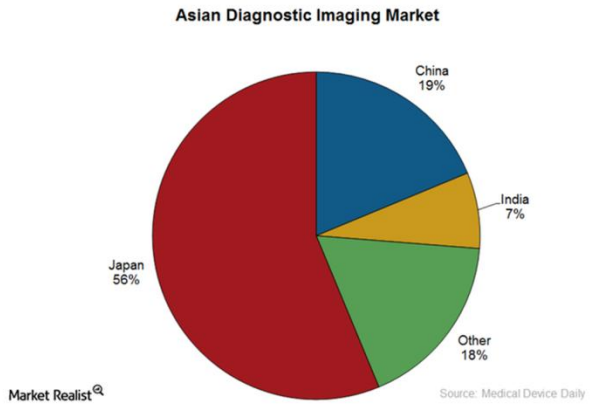
Developing interest in R&D crosswise over APAC is driving the microscopy gadgets advertise, similar to the development of colleges and research establishments there. An expanded concentrate on nanotechnology has turned into a driving element in this market portion, and development of the electronic and sustainable power source enterprises has supported the interest in microscopy gadgets in semiconductor applications. The high determination limit of such gadgets is driving R&D propels in neuro science and neurology. The expanding utilization of electron and examining test magnifying lens is further impelling the microscopy gadgets advertise section.

The market for photonic incorporated circuits (PICs) is quickly developing as a noteworthy industry area. The pivotal innovation is changing optical systems around the world. According to Markets and Markets, this fragment will reach $1.5 billion inside the following five years. And keeping in mind that North America held the reins for the PIC section in 2015, APAC has developed as a solid area with brisk market development expected by Statistics Market Research Consulting. As per Markets and Markets, APAC ought to wind up plainly the PIC showcase pioneer by 2022, developing every year by 26 percent.

The IR identifiers advertise is another in which APAC should see quick, critical development throughout the following five years. Unified Market Research found that China, specifically, has the greatest market for IR indicator makers and customers. Generally speaking, the market in APAC is being encouraged by security concerns, producing industry exercises and expanded uses in developing markets, for example, Japan and India.

The global market for lasers in 2010 was $7.1 billion and is expected to reach $7.9 billion in 2011. The market is expected to rise at a compound annual growth rate (CAGR) of 9.5% and reach nearly $12.5 billion by 2016.The contribution of the Americas region will change from 29.5% in 2011 to 27.5% in 2016. This market segment is estimated to reach nearly $2.3 billion in 2011 and $3.4 billion by 2016, a CAGR of 7.9% over the five year period. The contribution of the Asia-Pacific (APAC) region will change from 41.6% in 2011 to 44.1% in 2016. The segment is expected to reach $3.3 billion in 2011, and should reach nearly $5.5 billion in 2016, a CAGR of 10.8% between 2011 and 2016.

According to a new market research report “Laser Technology Market by Type (Solid - YAG laser, Fiber laser, Thin Disk Laser, Liquid, Gas - Argon Ion Laser, Excimer, CO2 and Others), Application (Medical, Industrial, Military, Research, Consumer, and Others), and Geography - Trends and Forecast to 2013 - 2020” the total market is expected to grow to$17.06 billion by 2020, at an estimated CAGR of 7.58% from 2014 to 2020.



From bio and medicinal applications to resistance and security, the photonics showcase in all fields is surging, as the Asia-Pacific area turns into the "biggest and quickest developing business sector for photonics," as per advertise specialists. Also, there are no signs it will back off at any point in the near future. The photonics and lasers showcase development in APAC is expected principally to three variables: quicker financial development in APAC than different districts of world, move in assembling to APAC, and an expanding utilization of lasers for assembling.

Electronics is expected to be the largest market

Lasers are used to manufacture electronic products, such as cell phones, microprocessors, display panels, and memory chips. These electronic products comprise of a large number of different materials, multiple layers of extremely low thicknesses, and very small features, which require advanced and high-precision manufacturing processes. To manufacture these complex components, use of laser materials has increased in the recent years in the electronics industry. In addition, expanding use of electronics by consumers, declining prices of electronics and increase in demand for various electronic products in households and offices is further driving the market for lasers in the electronics industry globally.

A laser differs from other sources of light in that it emits light coherently, spatially and temporally. Spatial coherence allows a laser to be focused to a tight spot, enabling applications such as laser cutting and lithography. Spatial coherence also allows a laser beam to stay narrow over great distances, enabling applications such as laser pointers. Photonics is the physical science of light (photon) generation, detection, and manipulation through emission, transmission, modulation, signal processing, switching, amplification, and detection/sensing. Photonics is closely related to optics. Classical optics long preceded the discovery that light is quantized, when Albert Einstein famously explained the photoelectric effect in 1905. Optics tools include the refracting lens, the reflecting mirror, and various optical components and instruments developed throughout the 15th to 19th centuries.

USA Universities:

- Stanford University
- Harvard University
- California University
- University of Chicago
- Yale University
- The Ohio State University
- University of South Florida
- University of Central Florida
- Johns Hopkins University
- North western University
- Carnegie Mellon University
- Brown University
- University of Texas
- Georgia Institute of Technology

European Universities:

- The University of Warwick
- The University of Manchester
- Lancaster University
- The University of Edinburgh
- University of Cambridge
- University of Oxford
- University of Glasgow
- Newcastle University
- University of Liverpool
- Coventry University
- University off Portsmouth
- London Southbank University
- University of Suss
- University of Dundee
- Bangor University

Asian Universities:

- Tsinghua University
- Fudan University
- Shanghai Jiao Tong University
- Zhejiang University
- Nanjing University
- Huazhong University
- Shenzhen University
- Ural Federa University
- Edity Cowan University
- University of Tasmania
- University of Wollongong
- The University of Western Australia
- National University of Singapore
- The University of Sydney
- Novosibirsk State University

Global University and Research Centres

- Center for Photochemical Sciences

- Center for Advanced Materials Research
- Centre for Manufacturing Metrology
- University of California at Berkeley
- Center for Optics, Photonics and Lasers
- Centre for Laser Processing of Materials
- Centre for Sensors, Instruments and Systems Development
- Center for Optical Materials Science and Engineering Technologies
- Center for Electronic Imaging Systems
- Physics and Optical Engineering

Global Association & Societies:

Laser Societies in USA:

- Optical Society of America
- National Society of Black Physicists
- The International Society for Optics and Photonics
- Ontario Centre of Excellence for Photonics
- Laser Institute of America
- American Society for Laser Medicine and Surgery
- New Mexico Optics Industry Association
- Florida Photonics Cluster
- Academy of Infrared Training Bellingham
- Academy of Laser Dentistry
- Radiological Society of North America
- Association for Advancing Vision + Imaging
- Association for the Advancement of Medical Instrumentation
- American Society for Photogrammetry & Remote Sensing
- American Society for Precision Engineering
- The American Precision Optics Manufacturers Association
- Finnish Optical Society

Laser Societies in Europe:

- Danish Optical Society
- Italian Physical Society
- French Physical Society
- Advanced UV for Life Berlin
- European Physical Society
- Society of Physics Students
- Ualbany Society of Physics
- European Society of Laser Aesthetic Surgery
- International Centre for Theoretical Physics
- European Organization for Nuclear Research
- International Union of Pure and Applied Physics

Laser Societies in Asia:

- The Regional Center for Next Generation Manufacturing.
- Indian Laser Association Optical Society of India.
- Taiwan Optics/Optronics Manufacturers Association.
- Photonics Industry & Technology Development Association.
- Australian Optical Society
- The Japan Society of Applied Physics
- Bangladesh physical society
- Physical society of Japan
- Korean physical society
- Chinese physical society
- Nepal physical society
- Association of Asia pacific physics