Journal of Polymer Science & Applications

Awards 2020

Past conference report on Smart Materials & PolymerTechnology

Aharon Gedanken

Professor, Department of Chemistry, Barâllan University, Israel, E-mail: Aharon. Gedanken@biu.ac.il

"13th International conference on Smart Materials and Polymer Technology" organized in Paris, France during February 19-20, 2020. Smart Materials 2020 initiates an as well as the novel applications of smart emerging materials in materials science. Content science professionals gathered around the world to learn about the latest developments and innovations as well as novel applications of smart emerging materials.Smart Materials & Polymer Technology Conference 2020 is a 2-day program that offers exhibition at the venue to display new and emerging technologies and has extensive sessions in which the main Keynote presentation, YRF (student presentation), Oral, Posters, E-poster presentations. To share their valuable presentation on the most recent and advanced techniques, development and latest updates, a world-renowned speaker and prominent representative representatives from all over the world participate in the conference. On that note, Smart Materials Conference 2020 invites all interested participants to this prestigious event in the grand destination Paris, France.

Scientific Session

- Emerging Smart Materials
- Materials Science and Engineering
- Carbon Nanotubes, Graphene and Composites
- Material Synthesis and Characterization
- Optical, Magnetic and Electronic Materials
- Nanotechnology
- Piezoelectric Materials and 3-D Printing
- Materials in Healthcare
- Market Demand and Future
- Ceramics and Textiles Industries
- Polymer Science and Engineering
- Sustainable Energy and Development

Smart Materials and Polymer Technology 2020 are the global smart materials market size was valued at USD 32.77 billion in 2016 and is anticipated to expertise sturdy growth at a CAGR of 13.5% from 2017 to 2025. They exhibit responsiveness in a very controlled manner to ever-changing environments. They need a molecular structure that permits them to retort to a good array of external stimuli, like electrical fields, magnetic fields, pressure, temperature, moisture, and chemicals.

Why to organize this conference:

Smart material and polymer technology conference area unit organize as a result of several edges of smart materials depend upon the actual fact that it's doable to tailor the structures of materials at extraordinarily tiny scales to attain specific properties, so greatly extending the materials science toolkit. Exploitation technology, materials will effectively be created stronger, lighter, a lot of sturdy, a lot of reactive, a lot of sieve-like, or higher electrical conductors, among several alternative traits. Several everyday business product area unit presently on the market and in daily use that have confidence sensible materials and processes.

Smart Material helps to significantly improve, even revolutionize, several technology and business sectors: data technology, Office of Homeland Security, medicine, transportation, energy, food safety, and biology, among several others. Delineated below could be a sampling of the chop-chop growing list of advantages and applications of technology.

Electronics and IT Applications: Smart materials has greatly contributed to major advances in computing and electronics, leading to faster, smaller, and more portable systems that can manage and store larger and larger amounts of information.

Medical and Healthcare Application: Nanotechnology is already broadening the medical tools, knowledge, and therapies currently available to clinicians. Nanomedicine, the application of nanotechnology in medicine, draws on the natural scale of biological phenomena to produce precise solutions for disease prevention, diagnosis, and treatment.

Energy Applications: Smart materials is finding application in traditional energy sources and is greatly enhancing alternative energy approaches to help meet the world's increasing energy demands. Many scientists are looking into ways to develop clean, affordable, and renewable energy sources, along with means to reduce energy consumption and lessen toxicity burdens on the environment.

Environmental Remediation: In addition to the ways that Smart materials can help improve energy efficiency, there are also many ways that it can help detect and clean up environmental contaminants. Smart materials could help meet the need for affordable, clean drinking water through rapid, low-cost detection and treatment of impurities in water.

Future Transportation Benefits: Smart materials offers the promise of developing multifunctional materials that will contribute to building and maintaining lighter, safer, smarter, and more efficient vehicles, aircraft, spacecraft, and ships. In addition, Smart Materials offers various means to improve the transportation infrastructure.

Scope of conference:

Smart materials have several applications in numerous fields of medication and engineering and additionally the increase in demand for the good materials is enough to believe that there's a good scope for the good materials within the future. The event of true good materials at the atomic scale remains how off, though the sanctioning technologies area unit below development. Worldwide, considerable effort is being deployed to develop smart materials and structures and also the technological edges of such systems have begun to be known and, demonstrators area unit below construction for a good

vary of applications from area and part, to engineering and domestic product these systems area unit recognized as a strategic technology for the longer term, having considerable potential for development of unknown product and performance improvement of existing product in industrial sectors that is that the way forward for smart materials and additionally creates several job opportunities during this sector.

Business value:

The global smart materials market is anticipated to succeed in USD 98.2 billion by 2025, in keeping with a report by Grand read analysis, Inc. in depth analysis & innovation activities have widened the economic applications of sensible materials. Increased use of sensible actuators & motors, sensors, and structural materials is anticipated to bolster the demand over consecutive few years. Smart materials are advanced product, which might sense and answer a broad vary of stimuli, as well as electrical and magnetic fields, temperature, pressure, mechanical stress, hydrostatic pressure, nuclear radiation, and amendment. Distinctive properties of those product enable them to revert to their original state once removal of the stimuli.

Top global Universities in the field of Smart material:

- Nanyang Technological University
- Massachusetts Institute of Technology
- Stanford University
- Tsinghua University
- Harvard University
- Georgia Institute of Technology
- University of California--Berkeley
- Fudan University
- National University of Singapore
- Peking University

List of Universities in the field of Smart material in Europe:

- Universite Paris Saclay (ComUE)
- Communaute Universite Grenoble Alpes
- PSL Research University Paris (ComUE)
- Universite de Lyon (ComUE)
- Languedoc-Roussillon Universites (ComUE)
- University of Lorraine
- Communaute d'Universites et Etablissements d'Aquitaine (ComUE)
- University of Strasbourg
- Universite Sorbonne Paris Cite-USPC (ComUE)
- Universite Federale Toulouse Midi-Pyrenees (ComUE)

List of Universities in the field of Smart material in America:

- Universidade de São Paulo
- State University of Campinas
- Federal University of Sao Carlos
- UNESP - Universidade Estadual Paulista
- National Autonomous University of Mexico
- Federal University of Minas Gerais
- Federal University of Rio Grande do Sul
- Federal University of Santa Catarina

List of Universities in the field of Smart material in Australia/New Zealand:

- Monash University
- University of Wollongong
- University of New South Wales
- University of Queensland Australia
- University of Adelaide
- University of Melbourne
- University of Sydney
- RMIT University
- Deakin University
- Curtin University of Technology

List of Universities in the field of Smart material in Asia/Africa:

- Nanyang Technological University
- Tsinghua University
- Fudan University
- National University of Singapore
- Peking University
- Shanghai Jiao Tong University
- University of Science and Technology of China
- Seoul National University
- Zhejiang University
- Soochow University
- Universite de Sfax

Members Associated with Materials Science:

Research Positions:

- Research Associate
- Research Scientist
- Bitumen Research Associate

Apart from the industrial personnel where most of the research work is done, other research communities include:

- Academicians include Student community

- Researchers include Post docs, Research Associates
- Scientists include Professors, Associate professors and Assistant professor
- Industries include Presidents, CEO's and R&D Managers

Major Materials Science Associations around the Globe:

- American Chemical Society (ACS)
- American Physical Society (APS)
- The Materials Information Society (ASM International)
- Microscopy Society of America (MSA)
- The Minerals, Metals & Materials Society (TMS)
- Sigma Xi: The Scientific Research Society
- International Society for Optical Engineering (SPIE)
- The American Ceramic Society (ACerS)
- International Association of Advanced Materials (IAAM)

Market Growth of Materials Science in the last and upcoming five years:

The global market is projected to achieve $6,000 million by 2020 and register a CAGR of 10.2% between 2015 and 2020 in terms important . the expansion within the market is calculable to be driven by the increasing demand for aerogel materials from oil & gas and construction applications. The North yank region remains the most important market, followed by Asia-Pacific. The Europe market is calculable to be growing at a gentle rate because of economic recovery within the region at the side of the increasing concern for the building insulation and energy savings.

References:

- https://www.marketdataforecast.com/market-research
- https://www.grandviewresearch.com/

Conclusion:

- Smart materials are able to sense and respond to environment around them. They have the potential to improve existing technology and add new functionality to products. They have applications in a wide variety of areas and they have an waste reduction important role in waste reduction.
- They have a capability to work in multifunctional way. Although Smart materials and systems have been researched for decades, commercial exploitation has been slow. The interdisciplinary nature of the subject and divide between scientist and designers has slowed this exploitation.
- Thus we conclude that there is an important role of smart materials in our life.