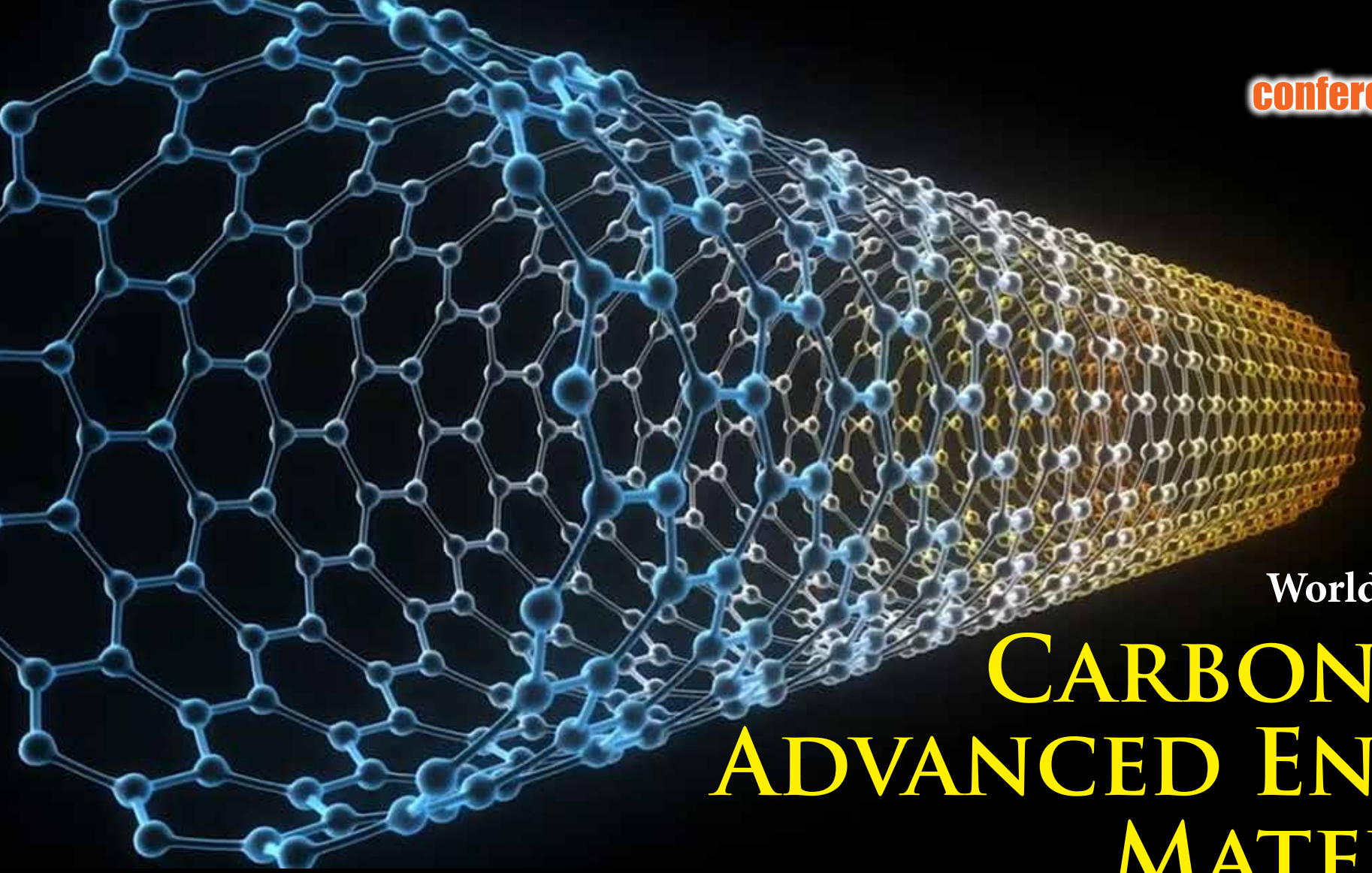

World Congress on

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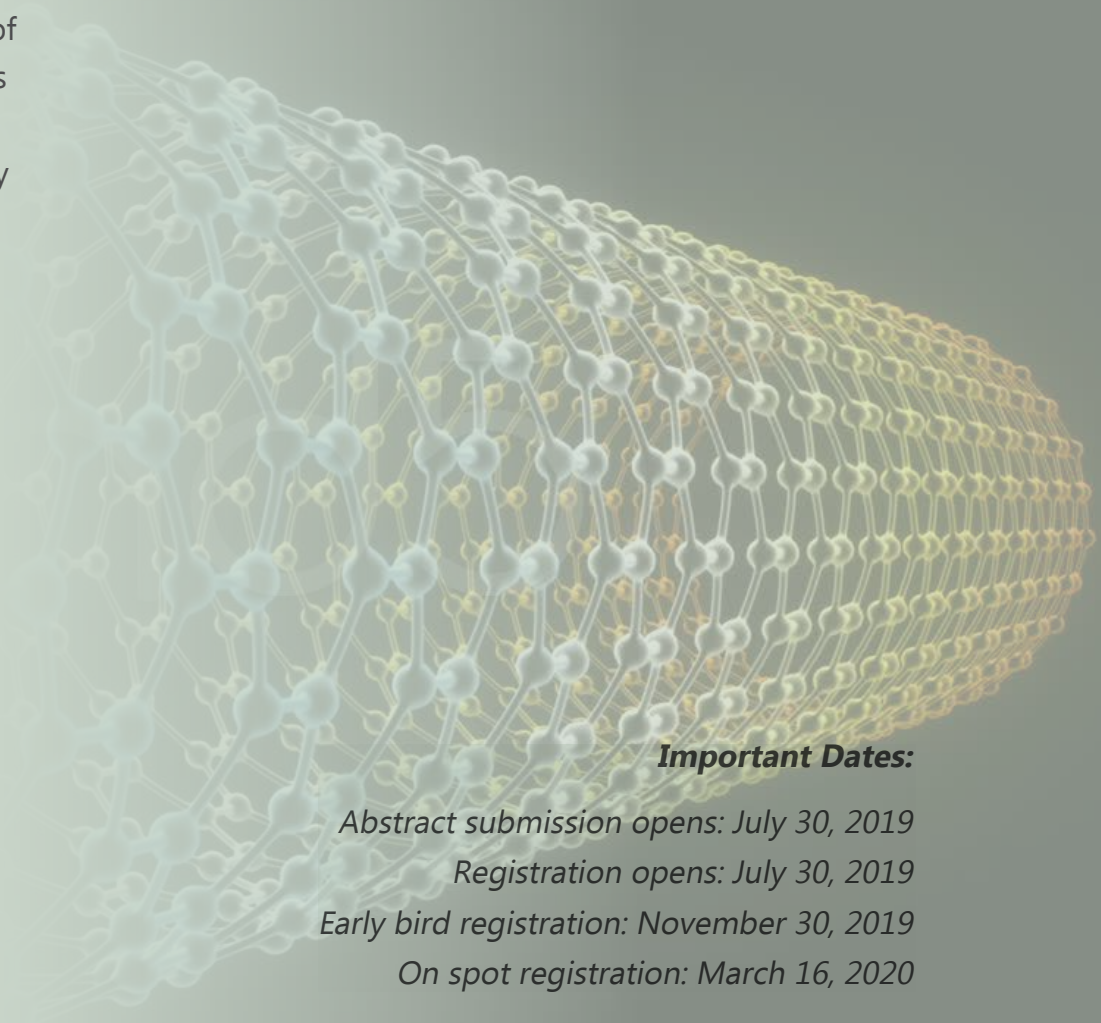
Conference Sessions:

All honorable authors, researchers, scientists and students are encouraged to contribute and help the shape of the Conference through submissions of their posters & research abstracts. Also, high quality research contributions describing Original and unpublished of conceptual, constructive, experimental or theoretical work in all areas of Anesthesiologist are warmly invited to exhibit their product at the conference.

- Nano carbon Materials
- Carbon Nanotubes, Graphene and its Application
- Novel Hybrid Carbon Materials
- Carbon Materials in Energy
- Applications of Graphene in energy and Biomedicals
- Graphene and Other 2D Materials
- Electrochemistry of diamond and Nano carbon materials
- Synthetic Graphite
- Large Scale Graphene Production and Characterization
- Emerging trends in Graphene Research
- Applications of Synthetic Graphite and Natural Graphite
- Advanced Carbon and Graphene Materials
- Advanced Energy Materials
- Macro/Nano Advanced Materials
- Optical, Electronic, Magnetic Materials



Important Dates:

Abstract submission opens: July 30, 2019

Registration opens: July 30, 2019

Early bird registration: November 30, 2019

On spot registration: March 16, 2020

Speaker Slots Available

NOTE: Program Schedule is subject to change with final allotment of the speaker slots

Program at Glance

Day 01 | March 16, 2019

Time	Session
08:30-09:30	Registrations
09:30-11:30	Keynote Forum
	Group Photo
11:30-11:45	Network & Refreshments Break
11:45-14:00	Nano carbon Materials | Carbon Nanotubes | Graphene and its Application
14:00-15:00	Lunch Break
15:00-16:00	Novel Hybrid Carbon Materials | Carbon Materials in Energy | Applications of Graphene in energy and Biomedicals
16:00-16:20	Network & Refreshments Break
16:20-18:00	Graphene and Other 2D Materials | Electrochemistry of diamond and Nano carbon materials | Synthetic Graphite
	Day Concludes

Day 02 | March 17, 2019

Time	Session
09:00-11:30	Large Scale Graphene Production and Characterization | Emerging trends in Graphene Research
11:30-11:45	Network & Refreshments Break
11:45-14:00	Applications of Synthetic Graphite and Natural Graphite | Advanced Carbon and Graphene Materials
14:00-15:00	Lunch Break
15:00-16:00	Advanced Energy Materials | Macro/Nano Advanced Materials | Optical, Electronic, Magnetic Materials
16:00-16:20	Network & Refreshments Break
16:20-18:00	Poster Presentations
	Day Concludes
	Award Ceremony
	Conference Concludes

Title: Effect of O2 Mass Transport Coefficients at the Pt | Binder Interface on the Performance of High Temperature Proton Exchange Membrane Fuel Cell by Microelectrode Method

Shuomeng Zhang, Zhejiang University, China

Abstract: Oxygen mass transport in cathode catalyst layer (CCL) of high temperature proton exchange membrane fuel cells (HT-PEMFCs) plays an important role in promoting the fuel cell performance and improving the Pt utilization owing to the oxygen mass transport resistance resulting from the binder existing in CCL. However, there are no direct and quantitative evidences to illustrate the effect of different binder on O2 mass transport. In addition, phosphoric acid (PA) leaching caused durability problems for HT-PEMFCs. However, the effect of PA leaching on O2 mass transport in binder was also rarely investigated.....

Title: Vertical graphene network: synthesis, functionalization and applications

Mineo Hiramatsu, Meijo University, Japan

Abstract: Carbon nanowalls (CNWs) are self-supported network of few-layer graphenes standing almost vertically on the substrate to form 3-dimensional (3D) structure. This kind of 3D carbon nanostructure is also called as carbon nanoflakes, carbon nanosheets, graphene nanosheets, and graphene nanowalls. CNWs and related materials can be synthesized by plasma enhanced chemical vapor deposition (PECVD) techniques on heated substrates employing methane and hydrogen mixtures. The height of CNWs increases almost linearly with the growth period, while the thickness of each sheet and interspaces between adjacent sheets are almost constant.....

Title: Biosynthesis, Characterization and Interplay of Bacteriocin-Nanoparticles to Combat Multidrug Resistant Pathogens

Asma Ansari, University of Karachi, Karachi 75270, Pakistan

Abstract: In the contemporary consequence, nanoparticles have emerged as a novel antimicrobial agent due to their high surface area to volume ratio and the inimitable physicochemical properties. The emergence of multidrug resistant pathogens could unlock the potential of nanoparticles to combat infectious diseases. Over few years, nanoparticles have been associated with not only the physical and biological but also numerous pharmaceutical applications. Metallic nanoparticles have a substantial scientific interest because of their distinctive physico-chemical and antimicrobial properties. The aim of the current study is to enhance the antibacterial potential of purified bacteriocin by combining bacteriocin and antibacterial silver nanoparticles (AgNPs)...

Title: A Mechanism for the Enhancement of the Catalytic Activity of Graphene as a Support Material for Oxygen Evolution Reaction Based on Mixed Potential Theory

G. B. Reda

Abstract: Catalysts for oxygen reduction and evolution reactions are at the heart of key renewable-energy technologies including fuel cells and water splitting. All of them are two-electrode systems, where the cathode part involves hydrogen evolution reaction (HER) or oxygen reduction reaction (ORR) and the anode part proceeds with oxygen evolution reaction (OER) or oxidation of some chemical fuels. One of the important reasons that keeps these systems from being of practical use to date is the sluggish kinetics of the oxygen evolution reaction. Studies have demonstrated that the composite materials comprising TMOs and electron conducting carbonaceous materials or polymers exhibit significantly enhanced electrochemical performance when used as electrode materials.....

Title: Design and Development of Flexible UV Band-Pass Filter for Laser Applications

G. Kedawat, CSIR- National Physical Laboratory, New Delhi, India

Abstract: We introduce a novel strategy for the design and development of silver/polycarbonate (Ag/PC) nanocomposite flexible films having micron size thickness using modified solution cast−thermal evaporation method. Structural characterizations confirmed the good crystallinity with cubic phase of Ag nanoparticles in PC films. Further, micro-structural studies of nanocomposite films were also investigated by transmission electron microscopy, which confirmed that the metal fraction is in the form of fractals. Moreover, the plasmonic fluorescence mapping insures to the uniform distribution of Ag NPs throughout Ag/PC nanocomposite films.

Title: Synthesis of diverse carbonaceous materials from natural and waste raw materials for various applications

I.C. Arunachellan, University of Johannesburg, South Africa

Abstract: Carbonaceous materials have been widely used for a diverse number of applications based on tailored synthetic steps. Carbon in the form of activated carbon (AC) has been used in many applications. This research focuses on three different types of waste materials; avocado seed (AS), tyre waste (BT) and tree fibres (TF) as diverse sources of carbon. Through sequential two-step oxidation, carbon-based materials were obtained. The first step was the carbonisation of the raw materials using low temperatures, which resulted in the production of amorphous AC from all the raw materials. The next synthetic step used the modified Hummer's method to oxidise the newly synthesised AC....

Title: Research on N-doped carbon formation during biomass N-enriched pyrolysis

Wei Chen, Huazhong University of Science and Technology, China

Abstract: Biomass pyrolysis for high-valued products is an important development direction for biomass utilization. Biomass contains large amounts of O-containing groups. If using nitrogen to substitute oxygen, we may obtain abundant N-doped carbon materials contain lots of active N-containing groups, which can be applied in catalysis, adsorption, and energy storage. This research focused on formation mechanisms of N-doped carbon during introducing exogenous nitrogen, which is in favor of realizing efficient and valuable utilization of biomass wastes. The main works are shown as follows.

Title: Waste Polymer Derived Porous Carbon for Energy Storage

Xuecheng Chen, West Pomeranian University of Technology, Poland

Abstract: Nowdays, many common thermoplastic polymers used in our society, such as polypropylene (PP) and polystyrene (PS), are enriched carbon carriers compared to biomass. For example, the current global PP capacity of about 62 million tons is likely to extend by more than 23.5 million tons by 2019.Waste PS and PP are one of main resources for the formation of "white pollution." Facing the increasing pressure from white pollution of waste polymers, how to treat these polymer wastes is still a great challenge.....

Title: Facile synthesis of Au, Pt doped TiO2 nanoparticles and their dye sensitized solar cell, photocatalytic and mercury sensing applications

C. Balalakshmi, Alagappa University, India

Abstract: In this study, we carried out a simple approach to Au and Pt doped TiO2 NPs were successfully synthesized by Azadirachta indica leaf extract. The properties of the synthesized NPs were characterized by UV-Vis-DRS, ATR-FT-IR, PL, XRD, Raman, XRF, SEM and TEM analyses. The synthesized NPs were investigation for dye sensitized solar cell, methylene blue degradation and electrochemical behavior applications. In addition, Au/TiO2 was tested to real time detection of Mercury (Hg) in aqueous solutions. The UV–vis DRS spectral analysis of Au/TiO2 clearly exhibited the absorption peak at 553 nm and Pt//TiO2 inter band absorption at 306 nm. By incorporation of Au and Pt in the TiO2 matrix did not change significantly in Raman corresponding peaks

Title: Fluorinated ethylene-propylene/graphite composites with single-walled carbon nanotubes for fuel cell bipolar plates

Jong Seok Woo PhD, Morgan Advanced Materials, Korea

Abstract: In recent years, there has been an increasing number of fuel cell applications for different modern technological devices. Among fuel cells, the phosphoric acid fuel cell (PAFC) has attracted significant interest as an attractive power source because of its long-term stability; PAFCs are known to be able to run for more than 10 years. The most important component in the PAFC is the bipolar plate (BP), which constitutes 60–80% of the total weight and 30–40% of the total cost. BPs have been made with metals such as stainless steel, aluminum, and titanium. Metal-based BPs exhibit an excellent electrical conductivity, high mechanical strength, and low production cost.

Title: Applications of carbon-based nanomaterials in electro-chemistry

Ping Yang, University of Jinan, China

Abstract: Hear in, carbon-based materials, such as reduced graphene oxide (rGO) and graphitic carbon nitride (g-C3N4) were used to created composite materials for electrochemistry applications. Namely, superior thin g-C3N4 were created with different crystallinity was obtained via controlling the thermalcondensation processed. Crystalline and amorphous g-C3N4 revealed different photo- and electro-catalysis properties. With doping and adjusting the recrystalline process of precursors, various tubular morphologies. Such tubular g-C3N4 revealed superior photocatalysis performance for the degradation of dye in lake water..

Title: A low-voltage low-power positive feedback operational amplifier using Carbon Nanotube Field Effect Transistor

Varsha bender

Abstract: The operational amplifier (op amp) design in very deep submicron technology endure the barriers like exponential increase in leakage current, process variations, quantum-mechanical tunneling, and lithographic limitations. This results in low gain stages and decreased impedance thereby degrading the performance of op amp. In order to provide improvements in electrostatics over complementary metal oxide semiconductor (CMOS) and to sustain Moore's law in near future, various advanced and beyond CMOS devices are evolved over the period such as ultra-thin body single or multiple-gate field effect transistors (MG-FETs), FinFET, dynamic threshold MOSFET, silicon on insulator (SOI) FETs, strained silicon and, carbon nanotube field effect transistors (CNFET)

Title: Electrochemical properties of ternary rGO/CuS/PANI nanocomposite for supercapacitor electrodes

Mebrahtu Melake Mezgebe, The State Key Laboratory, Shanghai, China

Abstract: Although the metal-like electronic conductivity and high theoretical capacity of copper sulfide (CuS) makes it a promising material in supercapacitors, its poor cycling stability due to volume change during charge-discharge processes is a great challenge. To overcome this challenge, a novel 3D ternary nanocomposite of graphene-CuS-polyaniline (rGO/CuS/PANI) was designed and fabricated via in-situ hydrothermal polymerization methods. The structure and performances of the rGO/CuS/PANI-based electrode was characterized by powder X-ray diffraction, x-ray photoelectron spectra, scanning electron microscope, high-resolution transmission electron microscopy and Fourier transform infrared spectroscopy.

Title: Application of Carbon Based Nanomaterial in Industrial Wastewater Treatment

Mustafa Khamis, American University of Sharjah, Sharjah, UAE

Abstract: Multiwall carbon nanotubes (MWCNTs) were chemically modified to yield products that remove selective pollutants from wastewater stream (Scheme 1). It was found that when the surface of MWCNTs is modified with the cationic surfactant cetyl trimethyl ammonium bromide (CTAB), a product that can remove Cr(VI) selectively was obtained.(98%). On the other hand, surface modification with the anionic surfactant sodium lauryl sulfate (SLS) after magnetization yielded a product that can remove Cr(III) selectively (99%). Langmuir isotherm model was the best fit for the removal of Cr(III) by MWCNTs-M-SLS and Cr(VI) by MWCNTs-CTAB, with an adsorption capacity of 66.2 mg/g and 27.8 mg/g, respectively. Adsorption kinetics for the removal of Cr(III) by MWCNTs-M-SLS and Cr(VI) by MWCNTs-CTAB, demonstrated that the adsorption is very fast (< 5min) for both ions. A regeneration study on saturated MWCNTs-CTAB was performed at 25oC and 35oC, in two cycles of desorption-adsorption with some reduction in performance

Title: Mechanical and electrochemical behavior of Al88Ce6TM6 (TM=Ti, Cr, Mn, Fe, Co, Ni and Cu) metallic glasses

Jianqi Zhang, Inner Mongolia University of Science and Technology, China

Abstract: Al88Ce6TM6 (TM=Ti, Cr, Mn, Fe, Co, Ni and Cu) metallic glasses were fabricated by melt-spun technique. The texture, crystallization, mechanical and electrochemical behavior of the as-spun glasses were analyzed by XRD, DSC, micro-indentation and electrochemical techniques. The compositional dependence of the Transition Metals (TM) on glass-forming ability and thermal stability was discussed. The study indicates that Ti, Cr, Mn, Fe, Co, Ni and Cu, respectively micro alloyed with both Al and Ce generally instigates formation of either a fully amorphous phase or a partially glassy state tessellated with Short Range Ordered (SRO) quasi-crystalline clusters or/and Face-Centered-Cubic Aluminum (FCC-Al) nanoparticles. These meta-stable textures confer the Al88Ce6TM6 glasses superior mechanical hardness (700-950 MPa) and corrosion resistance (10-7-10-8 A/cm2) to their counterpart conventional Al crystalline alloys such as AA 2024, AA 6061 and AA 7075 that usually exhibit hardness 500-600 MPa and corrosion resistance 10-6 A/cm2. The results manifest Al88Ce6TM6 (TM=Ti, Cr, Mn, Fe, Co, Ni and Cu) metallic glasses have potential engineering applications.

City Attractions








Venue

Sydney the oldest, biggest, and most beautiful of all Australian cities, lies amid a seductive intermingling of land and sea. Glide along the glittering harbor on a ferry, see the white sails of the Opera House gleaming in the sunshine, admire the graceful arch of the Harbour Bridge, and it's hard to imagine this vibrant state capital of New South Wales was once a convict colony. In 1788, it was at Sydney Cove where Captain Arthur Phillip, commander of the First Fleet, established the first British colony in Australia. Today, you can explore Sydney's fabled history in the narrow, cobbled laneways and historic buildings of the Rocks and the city's excellent museums, where you can also learn about the Gadigal aboriginal people, who once thrived on this land. Sydney still fizzes with the adventurous spirit of its settlers. You can climb the harbor bridge, surf the green-barrel breaks at Sydney's golden beaches, or fly over the city on a scenic tour. Wildlife-rich wilderness areas surround the city providing appealing day trip possibilities.

Site:

Sydney, Australia

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