Guest Editor (Steve Acquah):

Journal of Nanomaterials (Hindawi Corporation)

1D Nanomaterials 2010
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Synthesis and field emission properties of hierarchical ZnO nanostructures
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D Peng, Y Huang, K Yu, L Li… - Journal of Nanomaterials, 2010 - dl.acm.org
... Shanghai 200241, China Correspondence should be addressed to Ke Yu, yk5188@263.net Received 30 November 2009; Accepted 21 April 2010 **Academic Editor**: **Steve Acquah** Copyright © 2010 Deyan Peng et al. This is an **...**
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Biomimetic synthesis of zinc oxide 3D architectures with gelatin as matrix
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Y Gan, F Gu, D Han, Z Wang… - Journal of Nanomaterials, 2010 - hindawi.com
... State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology, Beijing 100029, China. Received 27 November 2009; Accepted 31 March 2010. **Academic Editor**: **Steve Acquah**. Copyright © 2010 Yong Gan et al. **...**
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Role of reaction and factors of carbon nanotubes growth in chemical Vapour decomposition process using methane: a highlight
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VM Sivakumar, AR Mohamed, AZ Abdullah… - Journal of …, 2010 - dl.acm.org
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Study on the Electrospun CNTs/Polyacrylonitrile-Based Nanofiber Composites
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Q Bo, D Xuejia, H Xiaoxiao… - Journal of Nanomaterials, 2011 - hindawi.com
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Electrochemical Degradation Characteristics of Refractory Organic Pollutants in Coking Wastewater on Multiwall Carbon Nanotube-Modified Electrode
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... Education, Shanghai Jiaotong University, Shanghai 200240, China. Received 19 May 2011; Accepted 7 August 2011. **Academic Editor**: **Steve Acquah**. Copyright © 2012 Yan Wang et al. This is an open access article distributed **...**
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Plasmonic Properties of Vertically Aligned Nanowire Arrays
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H Qi, OJ Glembocki… - Journal of Nanomaterials, 2012 - hindawi.com
... Electronics Science and Technology Division, US Naval Research Laboratory, Washington, DC 20375, USA. Received 13 July 2011; Revised 20 September 2011; Accepted 4 October 2011. **Academic Editor**: **Steve Acquah**. Copyright © 2012 Hua Qi et al. **...**
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Room Temperature Ferromagnetism of (Mn, Fe) Codoped ZnO Nanowires Synthesized by Chemical Vapor Deposition
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C Yongqin, W Pengwei, S Qingling… - Journal of …, 2011 - hindawi.com
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Effect of the on/off Cycling Modulation Time Ratio of C 2 H 2/SF 6 Flows on the Formation of Geometrically Controlled Carbon Coils
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WPG-Controlled Quantum BDD Circuits with BDD Architecture on GaAs-Based Hexagonal Nanowire Network Structure
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KS Sim, SM Lim, HD Kwen… - Journal of Nanomaterials, 2011 - hindawi.com
... Department of Chemistry, Hannam University, Daejeon 305-811, Republic of Korea. Received 15 June 2011; Accepted 14 September 2011. **Academic Editor**: **Steve Acquah**. Copyright © 2011 Kwang-Sik Sim et al. This is an open **...**
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Reviewer (Steve Acquah):

Journal of Mechanical Engineering Science [IMechE]
Journal of Engineering Manufacture [IMechE]
Journal of Nanoengineering and Nanosystems [IMechE]
Journal of Engineering in Medicine [IMechE]
Journal of Nanomaterials [Hindawi]
Nanotechnology [IOP]
Carbon [Elsevier]
Chemical Papers [Springer]
Education in Chemistry [Royal Society of Chemistry]

Achievements:

2011 - Founder of the GEOSET Awards

2010 - Sonic Foundry Rich Media Impact Award (Scholastic Achievement)

2009 - Nobel Laureates Meeting - Invited Participant / Certificate (Steve Acquah) – Lindau (Germany)

2009 - Winner – Sonic Foundry Rich Media Impact Award (Global Outreach)

2008 - Finalist – Sonic Foundry Rich Media Impact Award (Global Outreach)

2008 – Kroto Group Undergraduate

Rebecca Stone - Goldwater Scholarship
http://www.fsu.edu/news/2008/04/03/stone.award/

FSU Strength Skill Character 2008 VIDEO - National Advertising for FSU
http://vimeo.com/6436835

Radio Interview
http://news.fsu.edu/Watch-and-Listen/Radio-Stories/Rebecca-Stone

Poster Presentations:

ACS Spring Meeting (United States – San Francisco)
Global Educational Outreach for Science Engineering and Technology

NanoteC (United Kingdom - Brighton)
Carbon Nanotube Mats

World Convention Centre Summit (Japan)
Nanoscale Order

International Winterschool on Electronic Properties of Novel Materials (Austria)
Self-Assembly in Protein Fibres: Developments for Bio-Nanotechnology

University of Sussex (United Kingdom - Brighton)
Nanoscale Order & Assembly of a Protein Fibre

PPARC KITE Club Imaging for Life Sciences (United Kingdom - London)
Astronomical Techniques Applied to Nano-Scale Images

Selected Oral Presentations – Steve Acquah:

Maths & Science Day 2012 - USA
Mississippi School for Maths & Science
(**Keynote Speaker**)

Universitat Politècnica de València and FSU Campus in Valencia

2012 – Spain
Talk on nanotechnology and global outreach.

Sloan-C International Conference on Online Learning 2011 – USA
http://sloanconsortium.org/conferences/2011/aln/gooyouwikime-world-%E2%80%93-3d-how-mediasite-helps-teach-science-young-and-young-heart
(**Invited Speaker**)

Sonic Foundry Unleash Conference 2011 – USA
http://www.sonicfoundry.com/unleash2011/program/conference-sessions/speaker-bios
(**Invited Speaker**)

Google Headquarters – 2010 The Googleplex, Mountain View, California – USA
Talk alongside Bill Nye, Nature Magazine and Google CEO, British Broadcasting Corporation News – BBC News, USA Press.
http://en.wikipedia.org/wiki/Science_Foo_Camp
(Invited Speaker)

Florida State University - USA
Self-Assembly of a Designed Protein Fibre

Toyo University - Japan
Nanoscale Assembly

University of Sussex – United Kingdom
Poking the Nano-World with Nano-Fibres

University of Sussex – United Kingdom
Protein Fibres and Carbon Nanotubes: Developments for Bio-Nanotechnology

Television/Radio/Internet

FSU News – (United States)
TV News interview about GEOSET
http://vimeo.com/6089135

ABC News (Australia)
Radio Interview about Nobel Laureates conference (Steve Acquah)
http://www.abc.net.au/radionational/programs/scienceshow/genius-in-germany/3062878

Catalyst: Carbon Nano - ABC TV Science (Australia)
(Harry Kroto)
http://www.abc.net.au/catalyst/stories/3296794.htm

St. Petersburg Times (United States)
Newspaper article/interview about the GEOSET initiative
http://www.tampabay.com/features/humaninterest/article1037343.ece

Tallahassee Magazine (United States)
Newspaper article about GEOSET
http://tallahasseemagazine.com/index.php?option=com_content&task=view&id=652&Itemid=122

Schools Outreach
http://www.backyardnature.com/cgi-bin/gt/tpl.h,content=726

GEOSET Promo
http://www.youtube.com/watch?v=Se2yOHJrXos

Woodville Elementary School
http://mediasite.apps.fsu.edu/Mediasite/Viewer/?peid=f985d5b31bb84cddb1d6dba3ce9a45371d

5 Geeks and a Robot – GEOSET Award Winners 2011
http://www.youtube.com/watch?v=QpZHFFtpOIk

Royal Society of Chemistry News (United Kingdom)
Exclusive interview about making education available to everyone.
http://www.rsc.org/images/July%202008_tcm18-129698.pdf

Streaming Media (United States)
Report on winning the Rich Media Impact Award 2009

GEOSET admitted to the NPR and PBS Forum Network
http://forum-network.org/

Science With Acquah
Episodes – 2

Science With Acquah – Ask Steve
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http://www.geoset.fsu.edu/swa/asksteve1/AICC.htm [Episode 1]

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Publications:

Books

Recent Progress in Carbon Nanotube Research (2012)
Chapter: Interconnecting Carbon Nanotubes for a Sustainable Economy
Acquah S.F.A; Ventura D.N; Rustan S.E.; Kroto H. W.
ISBN 980-953-307-536-0

Electronic Properties of Carbon Nanotubes (2011)
Chapter: Strategies to Successfully Cross-Link Carbon Nanotubes
Acquah S.F.A; Ventura D.N; Kroto H. W.
ISBN 978-953-307-499-3
[2477 Downloads since July 2011]

Papers

***1D Nanomaterials 2012**
Zhu, Y.; Whitby, R.L.D.; Ma, R.; Acquah, S.F.A, *Journal of Nanomaterials*, **2012**

A flexible cross-linked multi-walled carbon nanotube paper for sensing hydrogen
Ventura D.N., Li S., Baker C. A., Breshike C. J., Spann A. L., Strouse G. F., Kroto H. W, Acquah S.F.A
Carbon, **2012**

On Paper the Future is Rosy
Acquah, S.F.A; Ventura, D.N; Kroto, H.W.
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L Chin Wei… - Journal of Nanomaterials, 2011 - hindawi.com
Self-organized TiO2 nanotube arrays have been fabricated by anodization of Ti foil in an electrochemical bath consisting of 1&# x2009; M of glycerol with 0.5&# x2009; wt&# x25; of NH4F. The effects of applied potential on the resulting nanotubes were illustrated. Among **...**

Black Paper (Paper Thin Carbon)
Acquah, S.F.A; Ventura, D.N; Kroto, H. W.
Education in Chemistry [RSC] July **2010**
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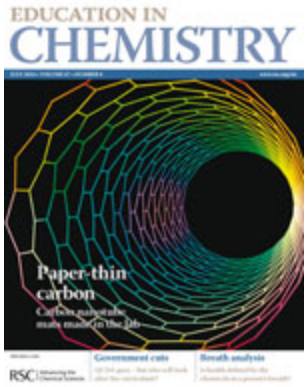

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Single-walled carbon nanotube thin-film counter electrodes for indium tin oxide-free plastic dye solar cells
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The use of a thin carbon nanotube (CNT) counter electrode (CE) on plastic in a dye solar cell (DSC) is demonstrated as an alternative to expensive indium tin oxide and platinum materials. Optically transparent, single-walled CNT films synthesized by the aerosol CVD **...**
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The use of microwave irradiation for the easy synthesis of graphene-supported transition metal nanoparticles in ionic liquids
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D Marquardt, C Vollmer, R Thomann, P Steurer… - Carbon, 2011 - Elsevier
Stable ruthenium or rhodium metal nanoparticles were supported on chemically derived graphene (CDG) surfaces with small and uniform particle sizes (Ru 2.2±0.4 nm and Rh 2.8±0.5 nm) by decomposition of their metal carbonyl precursors by rapid microwave **...**
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Comparison of dye solar cell counter electrodes based on different carbon nanostructures
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Three characteristically different carbon nanomaterials were compared and analyzed as platinum-free counter electrodes for dye solar cells: 1) single-walled carbon nanotube (SWCNT) random network films on glass, 2) aligned multi-walled carbon nanotube (**...**
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[PDF] Laser Patterning of Carbon-Nanotubes Thin Films and Their Applications
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SK Chang-Jian… - intechopen.com
In 1960 TH Maiman successful fabricated the first laser and projected the first laser light. Fifty years later, lasers have found extensive applications in fields including energy, materials, communications, biotechnology and mechanical engineering. In the past several decades **...**

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Initially scientists used high pressure techniques and ion beams to fuse the tubes together, and then turned their attention to modifying the surface of the nanotubes to create defects that could be further exploited. However, modifying the nanotube surface is not an easy process. **...**
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B Wu, Z Ou, X Ju… - Journal of Nanomaterials, 2012 - hindawi.com
This study develops a facile method to fabricate a novel choline biosensor based on multiwalled carbon nanotubes (MWCNTs) and gold nanoparticles (AuNPs). Chitosan, a natural biocompatible polymer, was used to solubilize MWCNTs for constructing the **...**
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Joining carbon nanotubes
GS Roberts… - Nanoscale, 2011 - xlink.rsc.org
To fully exploit the exceptional electronic and mechanical properties of carbon nanotubes in real-world applications, it is desirable to create carbon nanotube networks in which separate, multiple nanotubes are joined so that as many as possible of the properties of **...**
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Synthesis Of Cross-Linked Carbon Nanotube Mats And Their Applications
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DN Ventura - 2011 - etd.lib.fsu.edu
Abstract Carbon nanotubes (CNTs) possess excellent tensile strength and electron transport properties that make them a promising component in future materials and technologies. The covalent cross-linking of carbon nanotubes is one avenue of producing thin, flexible mats **...**
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Formation of uncapped nanometre-sized metal particles by decomposition of metal carbonyls in carbon nanotubes
TW Chamberlain, T Zoberbier, J Biskupek… - Chemical …, 2012 - pubs.rsc.org
Carbonyl complexes of transition metals (Mx (CO) y, where x ¼ 1, 2, or 3 and y ¼ 6, 10, or 12 for M ¼ W, Re, or Os, respectively) inserted into single walled carbon nanotubes (SWNT, diameter 1.5 nm) transform into metallic nanoparticles (MNPs) under heat treatment or **...**
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[PDF] Strategies to Successfully Cross-Link Carbon Nanotubes
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Since the inception of the research field on carbon nanotubes (CNTs), there has been an enormous effort to understand how the tubes form and how to best garner their unique electronic and mechanical properties. It soon became apparent that in order to develop **...**
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Covalent attachments of boron nitride nanotubes through a carboxylic linker: Density functional studies
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M Mirzaei, S Arshadi, S Abedini, M Yousefi… - Solid State …, 2012 - Elsevier
Abstract Properties of attached boron nitride (BN) nanotubes based on linking two zigzag nanotubes through a carboxylic (–(C= O) O–) linker were investigated by performing density functional theory (DFT) calculations. The linking boron and nitrogen atoms at the edges of **...**

Direct confirmation that carbon nanotubes still react covalently after removal of acid-oxidative lattice fragments

Wang, Z.; Korobeinyk, A.; Whitby, R. L. D.; Meikle, S. T.; Mikhalovsky, S. V.; Acquah, S.F.A.; Kroto, H. W. *Carbon* **2010**, *48*, 916-918

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Morphological changes and covalent reactivity assessment of single-layer graphene oxides under carboxylic group-targeted chemistry
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Acid–base titrations were used to assess the covalent reactivity of carboxylic groups on single-layer graphene oxides (SLGO) or hydrazine-reduced analogues (SLGR) when treated with thionyl chloride and subsequent coupling to amines. Reflux with aggressive **...**
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Surface Chemistry in the Process of Coating Mesoporous SiO2 onto Carbon Nanotubes Driven by the Formation of Si□ O□ C Bonds
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The deposition of mesoporous silica (SiO 2) on carbon nanotubes (CNTs) has opened up a wide range of assembling possibilities by exploiting the sidewall of CNTs and organosilane chemistry. The resulting systems may be suitable for applications in catalysis, energy **...**
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Raman analysis and mapping for the determination of COOH groups on oxidized single walled carbon nanotubes
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V Mussi, C Biale, S Visentin, N Barbero, M Rocchia… - Carbon, 2010 - Elsevier
Raman spectroscopy and mapping, coupled to molecular labelling, is used to analyse and monitor the first stage of carbon nanotube functionalization, ie their oxidation, which is usually performed to increase the number of surface carboxylic groups, allowing both a **...**
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Structural and proactive safety aspects of oxidation debris from multiwalled carbon nanotubes
D Stéfani, AJ Paula, BG Vaz, RA Silva… - Journal of Hazardous …, 2011 - Elsevier
The removal of oxidation debris from the oxidized carbon nanotube surface with a NaOH treatment is a key step for an effective functionalization and quality improvement of the carbon nanotube samples. In this work, we show via infrared spectroscopy and ultrahigh **...**
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Status of characterization techniques for carbon nanotubes and suggestions towards standards suitable for toxicological assessment
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FF Schweinberger… - Journal of Physics: …, 2011 - iopscience.iop.org
Nanotechnologies promise to contribute significantly to major technological challenges of the upcoming century. Despite profound scientific progress in the last decades, only minor advances have been made in the field of nanomaterial toxicology. The International Team **...**
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Morphological effects of single-layer graphene oxide in the formation of covalently bonded polypyrrole composites using intermediate diisocyanate chemistry
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RLD Whitby, A Korobeinyk, SV Mikhalovsky… - Journal of Nanoparticle …, 2011 - Springer
Abstract Single-layer graphene oxide (SLGO) possesses carboxylic and hydroxyl groups suitable for reactions with aliphatic or aromatic diisocyanate molecules. TEM analysis reveals that aliphatic diisocyanate molecules caused SLGO to scroll into star-like **...**
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A simple method for determining the neutralization point in Boehm titration regardless of the CO2 effect
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YS Kim, SJ Yang, HJ Lim, T Kim… - Carbon, 2011 - Elsevier
Abstract We report a simple method by which the neutralization point in the Boehm titration can be easily determined without going through a pre-screening process to remove the effect of atmospheric carbon dioxide (CO 2). The proposed method is based on the **...**
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Hydrotalcites: a highly efficient ecomaterial for effluent treatment originated from carbon nanotubes chemical processing
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OL Alves, D Stéfani, NV Parizotto - Journal of Physics: …, 2011 - iopscience.iop.org
It has been reported that a mixture of carboxylated carbonaceous fragments (CCFs), so called oxidation debris, are generated during carbon nanotubes chemical processing using oxidant agents such as HNO 3. The elimination of these fragments from carbon nanotubes **...**
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Vibration reduction ability of MWCNT PVAc composites measured under high frequency for acoustic device application
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Z Wang, RLD Whitby, M Rousseau, S Nevill… - J. Mater. Chem., 2011 - xlink.rsc.org
Through the functionalization strategy of multi-walled carbon nanotubes (MWCNTs) with polyvinyl acetate (PVAc), dampening material for acoustic devices was sought. In this paper, we investigated the effect of polymer grafting of MWCNTs on the frequency response **...**
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[PDF] Morphological and chemical features of nano and macroscale carbons affecting hydrogen peroxide decomposition in aqueous media
[PDF] from whitbyresearch.co.uk
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KV Voitko, RLD Whitby, VM Gun'ko… - Journal of colloid …, 2011 - whitbyresearch.co.uk
Numerous carbon materials are used in a variety of applications, including adsorption, catalysis, filling of polymers for strength, conductivity and so forth [1–3]. In the case of the adsorption of reactive compounds to carbons, chemical transformation of both **...**

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Microstructure changes of polyurethane by inclusion of chemically modified carbon nanotubes at low filler contents
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LV Karabanova, RLD Whitby, A Korobeinyk… - … Science and Technology, 2012 - Elsevier
The surface of multi-walled carbon nanotubes (MWCNTs) was modified to introduce acidic groups in either covalent or van der Waals interaction bonding environments to establish cross-linking sites with a host polymer. Nanocomposites based on a polyurethane matrix (**...**

Rapid assembly of carbon nanotube-based magnetic composites
[PDF] from whitbyresearch.co.uk
AV Korobeinyk, RLD Whitby, JJ Niu… - Materials Chemistry and …, 2011 - Elsevier
Abstract The rapid assembly of magnetic carbon nanotubes is mediated through the electrostatic attraction of α-haematite nanoparticles to carboxylic groups decorating their outer surface. The system is then stabilised through covalently bonding a silica coat using **...**
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Poking the nano world with nano fibres (short article)
Acquah, S.F.A. *RMS Proceedings*, **2005**

Polar assembly in a designed protein fiber
Smith, A. M.; Acquah, S. F. A.; Bone, N.; Kroto, H. W.; Ryadnov, M. G.; Stevens, M. S. P.; Walton, D. R. M.; Woolfson, D. N. *Angewandte Chemie-International Edition* **2005**, *44*, 325-328.

50 CITATIONS:

Designing peptide based nanomaterials
[PDF] from man.ac.uk
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RV Ulijn… - Chem. Soc. Rev., 2008 - xlink.rsc.org
This tutorial review looks at the design rules that allow peptides to be exploited as building blocks for the assembly of nanomaterials. These design rules are either derived by copying nature (α-helix, β-sheet) or may exploit entirely new designs based on peptide derivatives **...**
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Peptide-based stimuli-responsive biomaterials
[PDF] from ttu.edu
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RJ Mart, RD Osborne, MM Stevens… - Soft Matter, 2006 - xlink.rsc.org
This article explores recent advances in the design and engineering of materials wholly or principally constructed from peptides. We focus on materials that are able to respond to changes in their environment (pH, ionic strength, temperature, light, oxidation/reduction **...**
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Peptides as novel smart materials
Find it @ FSU
R Fairman… - Current opinion in structural biology, 2005 - Elsevier

Important challenges in biomaterials design include predicting the formation of large-scale self-assembled structures based on local atomic-level interactions and then endowing such structures with the ability to respond sensitively to environmental cues. This **...**
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Peptide-based fibrous biomaterials: some things old, new and borrowed
[PDF] from bris.ac.uk
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DN Woolfson… - Current opinion in chemical biology, 2006 - Elsevier
Bioinspired fibrous materials that span the nano-to-meso scales have potentially broad applications in nanobiotechnology; for instance, as scaffolds in 3D cell culture and tissue engineering, and as templates for the assembly of other polymer and inorganic materials. **...**
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Protein fibers as performance proteins: new technologies and applications
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T Scheibel - Current opinion in biotechnology, 2005 - Elsevier
Protein fibers are fundamental building blocks of life playing an essential role in motility, elasticity, scaffolding, stabilization and the protection of cells, tissues and organisms. Despite nearly a century of research into the assembly mechanisms and structures of **...**
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Engineering nanoscale order into a designed protein fiber
[HTML] from pnas.org
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D Papapostolou, AM Smith… - Proceedings of the …, 2007 - National Acad Sciences
Abstract We have established a designed system comprising two peptides that coassemble to form long, thickened protein fibers in water. This system can be rationally engineered to alter fiber assembly, stability, and morphology. Here, we show that rational mutations to **...**
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Self-assembled heterotrimeric collagen triple helices directed through electrostatic interactions
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V Gauba… - Journal of the American Chemical …, 2007 - ACS Publications
Collagen, a fibrous protein, is an essential structural component of all connective tissues such as cartilage, bones, ligaments, and skin. Type I collagen, the most abundant form, is a heterotrimer assembled from two identical α1 chains and one α2 chain. However, most **...**
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D-periodic collagen-mimetic microfibers
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S Rele, Y Song, RP Apkarian, Z Qu… - Journal of the …, 2007 - ACS Publications
Self-assembling peptides have been previously designed that assemble into macroscopic membranes, nanotapes, and filaments through electrostatic interactions. However, the formation of highly ordered collagen-like fibrils, which display D-periodic features, has yet **...**
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