NanoMed Digest

Nanomedicines Alliance Newsletter
February 2015

If you enjoy reading the monthly NanoMed Digest and would like to contribute to the work of the Nanomedicines Alliance, please consider joining the Alliance to help our work on promoting and facilitating the scientific advancement, regulatory approval, safe use and public appreciation of nanotechnology-based medicines. If you are interested in Nanomedicines Alliance membership, please contact us at info@nanomedicines-alliance.org.

Regulatory and Legislative Developments

European Commission Addresses Nanomaterials

The European Commission's Science for Environmental Policy released a Thematic Issue focusing on Nanomaterials' functionality in February 2015. In particular, the newsletter addresses health effects of graphene. The article addresses concerns regarding the effect of carbon nanotubes on human health and outlines general guidelines for safety. Mainly, these guidelines support using stable, individual graphene sheets that can be easily cleared from or biodegraded in the body to prevent damage from graphene accumulation in cell tissue.
http://ec.europa.eu/environment/integration/research/newsalert/pdf/nanomaterials_functionality_48si_en.pdf

NNI Budget Supplement

The US National Nanotechnology Initiative (NNI) recently released a Supplement to the President's 2016 Budget. The Supplement is also intended to serve as the NNI's Annual Report. Nearly half of the requested budget is focused on applied R&D and the Nanotechnology Signature Initiatives (NSIs), which emphasize commercialization and technology transfer. The NSIs include a focus on sustainable nanomanufacturing and creating a "Nanotechnology Knowledge Infrastructure". NNI also continue to fund nanoscience research and understanding nanotechnology EHS.
http://nano.gov/sites/default/files/pub_resource/nni_fy16_budget_supplement.pdf

Reviews and Other Publications of Interest

Wettability Engendered Templated Self-assembly (WETS) for Fabricating Multiphasic Particles. ACS Applied Materials & Interfaces, Vol. 7, Issue 7, pp. 4075 – 4080, January 2015. Sai P. R. Kobaku, Gibum Kwon, Arun K. Kota, Raghuraman G. Karunakaran, Philip Wong, Duck Hyun Lee, Anish Tuteja.
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Graphene oxide selectively targets cancer stem cells, across multiple tumor types: Implications for non-toxic cancer treatment, via "differentiation-based nano-therapy". Oncotarget, February 2015. Marco Fiorillo, Andrea F. Verre, Maria Iliut, Maria Peiris-Pagés, Bela Ozsvari, Ricardo Gandara, Anna Rita Cappello, Federica Sotgia, Aravind Vijayaraghavan, Michael P. Lisanti.
http://www.impactjournals.com/oncotarget/index.php?journal=oncotarget&page=article&op=view&path[]=3348&path[]=6631

Mechanism-Independent Optimization of Combinatorial Nanodiamond and Unmodified Drug Delivery Using a Phenotypically Driven Platform Technology. ACS Nano, February 2015. Hann Wang, Dong-Keun Lee, Kai-Yu Chen, Jing-Yao Chen, Kangyi Zhang, Aleidy Silva, Chih-Ming Ho, Dean Ho.
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Multicolored silver nanoparticles for multiplexed disease diagnostics: distinguishing dengue, yellow fever, and Ebola viruses. Lab on a Chip, February 2015. Chun-Wan Yen, Helena de Puig, Justina O.

For further information, or if you have any questions about the Nanomedicines Alliance, please contact the Nanomedicines Alliance Secretariat at 1-202-230-5653.

Tam, José Gómez-Márquez, Irene Bosch, Kimberly Hamad-Schifferli, Lee Gehrke.
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Theoretical analysis of dynamic processes for interacting molecular motors. Journal of Physics A: Mathematical and Theoretical, Vol. 48, No. 6, February 2015. Hamid Teimouri, Anatoly B Kolomeisky, Kareem Mehrabiani.
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Stepwise growth of surface-grafted DNA nanotubes visualized at the single-molecule level. Nature Chemistry, February 2015. Amani A. Hariri, Graham D. Hamblin, Yasser Gidi, Hanadi F. Sleiman, Gonzalo Cosa.
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TPA Immobilization on Iron Oxide Nanocubes and Localized Magnetic Hyperthermia Accelerate Blood Clot Lysis. Advanced Functional Materials, Vol. 25, Issue 11, pp. 1709 – 1718, February 2015. Eszter Voros, Minjung Cho, Maricela Ramirez, Anna Lisa Palange, Enrica De Rosa, Jaehong Key, Zsolt Garami, Alan B. Lumsden, Paolo Decuzz.
http://onlinelibrary.wiley.com/doi/10.1002/adfm.201404354/abstract;jsessionid=1B0B288DA31646F8D178563C2883D159.f03t03

Toxicity of Cellulose Nanocrystals: A Review. Industrial Biotechnology, Vol. 11, Issue, 1, pp. 25 – 33. February 2015. Megan Roman.
http://online.liebertpub.com/doi/abs/10.1089/ind.2014.0024

Force-Controlled Patch Clamp of Beating Cardiac Cells. Nano Letters, Vol. 15, Issue 3, pp. 1743 – 1750, February 2015. Dario Ossola, Mohamed-Yassine Amarouch, Pascal Behr, János Vörös, Hugues Abriel, Tomaso Zambelli.
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Chemical and Toxicological Evolution of Carbon Nanotubes During Atmospherically Relevant Aging Processes. Environmental Science & Technology, Vol. 49, Issue 5, pp. 2806 – 2814, January 2015. Yongchun Liu, John Liggio, Shao-Meng Li, Dalibor Breznan, Renaud Vincent, Errol M. Thomson, Premkumari Kumarathasan, Dharani Das, Jonathan Abbatt, María Antiñolo, Lynn Russell.
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Single-step fermentative production of the cholesterol-lowering drug pravastatin via reprogramming of Penicillium chrysogenum. Proceedings of the National Academy of Sciences, Vol. 112, No. 9, March 2015. Kirsty J. McLean, Marcus Hans, Ben Meijrink, Wibo B. van Scheppingen, Aad Vollebregt, Kang Lan Tee, Jan-Metske van der Laan, David Leys, Andrew W. Munroa, Marco A. van den Berg.
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Three-dimensional topology of the SMC2/SMC4 subcomplex from chicken condensin I revealed by cross-linking and molecular modelling. Open Biology, February

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http://www.nature.com/nmeth/journal/v12/n3/full/nmeth.3281.html

Revealing the density of encoded functions in a viral RNA. Proceedings of the National Academy of Sciences, Vol. 112, No. 7, February 2015. Nikesh Patel, Eric C. Dykeman, Robert H. A. Coutts, George P. Lomonossoff, David J. Rowlands, Simon E. V. Phillips, Neil Ranson, Reidun Twarock, Roman Tuma, Peter G. Stockley.
http://www.pnas.org/content/112/7/2227

CONFERENCES AND WORKSHOPS

Nanotechnology in Medicine and Biology, 8 – 10 April, 2015, Graz, Austria
- Biomedical applications
- Regenerative medicine
- Detection, diagnostics, therapeutics, and monitoring
- Oncology

http://www.bionanomed.at/

1st European Conference on Pharmaceutics: Drug Delivery, 13 – 15 April 2015, Reims, France
- Targeting
- Liposomes and nanoparticles

http://www.apgi.org/Reims2015.htm

5th Zing Bionanomaterials Conference, 25 – 28 April 2015, Algarve, Portugal
- Synthesis
- Characterization
- Toxicity
- Therapeutics

http://goo.gl/Y2lI1S

Nanotechnologies in Drug Delivery Congress, 27 – 28 April 2015, London, UK
- Nanoscale fabrication
- Drug delivery platforms
- siRNA
- Personalized medicine
- Imaging

http://www.mnmconferences.com/nanotechnologies.html

EuroNanoForum 2015, 10 – 12 June 2015, Riga, Latvia
- Nanomanufacturing
- Advanced Materials

http://euronanoforum2015.eu/

International Society for Biomedical Polymers and Polymeric Biomaterials, 8 – 10 July 2015, Orlando, FL
- Nanocomposites
- Drug delivery systems
- Controlled release systems
- Biomedical pharmaceutical polymers

http://isbppb.org/conferences-workshops/

International Conference on Biomedical Engineering and Systems, 13 – 14 July 2015, Barcelona, Spain.
- Biomedical devices
- Biomaterials
- Drug design
- Nanotechnology for biomedical applications

http://icbes.net/papers/

REFERENCE SECTION

Nanobio- and Nanomedicine Companies

Listed alphabetically:
http://www.nanowerk.com/nanotechnology/nanomaterial/nanobiomedicine_a.php

Nano Organizations

National Center for Toxicological Research (NCTR):
http://www.fda.gov/AboutFDA/CentersOffices/NCTR/default.htm

National Nanotechnology Initiative (NNI):
http://www.nano.gov/

Nano Science and Technology Consortium (NSTC): http://www.nstc.in/

Nano Science and Technology Institute (NSTI):
http://www.nsti.org/

The Nanotechnology Institute (NTI):
http://nanotechinstitute.org/

Nano Journals

American Chemical Society -- Nano Letters:
http://pubs.acs.org/journal/nalefd

Institute of Physics – Nanotechnology:
http://iopscience.iop.org/0957-4484/

Journal of Nanoscience and Nanotechnology:
http://www.aspbs.com/jnn/

NanoTrends - A Journal of Nanotechnology and its Applications: http://www.nstc.in/journal/default.aspx

BCC Research -- Nanotechnology Reports:
http://www.bccresearch.com/index/category/code/nanotechnology

Nanomedicine: Nanotechnology, Biology, and Medicine: http://www.nanomedjournal.com/home0

Nanomedicine:
http://www.futuremedicine.com/page/about.jsp

Nature Nanotechnology:
http://www.nature.com/nnano/focus/highlights/index.html?WT.mc_id=NM1110CT01

CONTACT

For further information, or if you have any questions about the Nanomedicines Alliance, please contact the Nanomedicines Alliance Secretariat at 1-202-230-5653 or info@nanomedicines-alliance.org.