Researchers show applied electric field can significantly improve hydrogen storage properties

Published: Tuesday, February 2, 2010 - 15:16 in Physics & Chemistry

Related images

(click to enlarge)

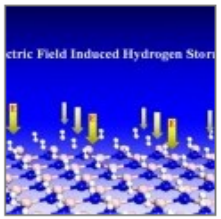


Image courtesy of Qian Wang, Ph.D./VCU.

An international team of researchers has identified a new theoretical approach that may one day make the synthesis of hydrogen fuel storage materials less complicated and improve the thermodynamics and reversibility of the system. Many researchers have their sights set on hydrogen as an alternative energy source to fossil fuels such as oil, natural gas and coal that contain carbon, pollute the environment and contribute to global warming. Known to be the most abundant element in the universe, hydrogen is considered an ideal energy carrier – not to mention that it's clean, environmentally friendly and non-toxic. However, it has been difficult to find materials that can efficiently and safely store and release it with fast kinetics under ambient temperature and pressure.

The team of researchers from Virginia Commonwealth University; Peking University in Beijing; and the Chinese Academy of Science in Shanghai; have developed a process using an electric field that can significantly improve how hydrogen fuel is stored and released.

Share

Email to a Friend
Print this Article
Twitter
Facebook
Delicious
StumbleUpon
Reddit

Other sources

Applied electric field can significantly improve hydrogen storage properties from Science Daily 1 day ago

4 more sources Click

Latest Science Newsletter

Get the latest and most popular science news articles of the week in your Inbox!

Enter your email Subscribe

Learn more about

alternative energy source

chinese academy of science

hydrogen storage materials

Science News

Applied Electric Field Can Significantly Improve Hydrogen Storage Properties

ScienceDaily (Feb. 3, 2010) — An international team of researchers has identified a new theoretical approach that may one day make the synthesis of hydrogen fuel storage materials less complicated and improve the thermodynamics and reversibility of the system.

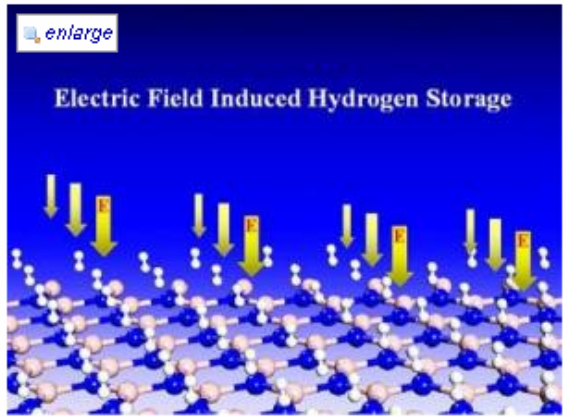
See Also:

Matter & Energy
- Alternative Fuels
- Electricity
- Materials Science
- Energy Technology
- Physics
- Fuel Cells

Reference
- Hydrocarbon
- Biomass
- Chemical compound
- Liquid nitrogen economy

Many researchers have their sights set on hydrogen as an alternative energy source to fossil fuels such as oil, natural gas and coal that contain carbon, pollute the environment and contribute to global warming. Known to be the most abundant element in the universe, hydrogen is considered an ideal energy carrier -- not to mention that it's clean, environmentally friendly and non-toxic. However, it has been difficult to find materials that can efficiently and safely store and release it with fast kinetics under ambient temperature and pressure.

The team of researchers from Virginia Commonwealth University; Peking University in Beijing; and the Chinese Academy of Science in Shanghai; have developed a process using an electric field that can significantly improve how hydrogen fuel is stored and released.



This image illustrates that an applied electric field polarizes hydrogen molecules and the substrate, inducing hydrogen absorption with good thermodynamics and kinetics. (Credit: Image courtesy of Qian Wang, Ph.D./VCU)

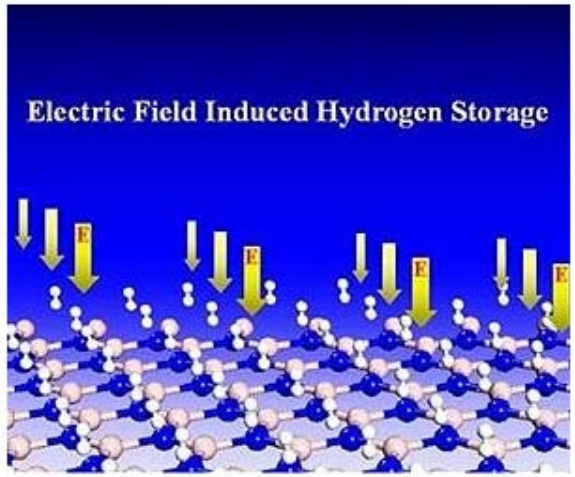
ENERGY DAILY
the power of earth and beyond

ENERGY TECH

Electric Field Could Improve Hydrogen Storage Systems

by Sathya Achia Abraham
Richmond VA (SPX) Feb 04, 2010

An international team of researchers has identified a new theoretical approach that may one day make the synthesis of hydrogen fuel storage materials less complicated and improve the thermodynamics and reversibility of the system.



This image illustrates that an applied electric field polarizes hydrogen molecules and the substrate, inducing hydrogen absorption with good thermodynamics and kinetics. Image courtesy of Qian Wang, Ph.D./VCU.

Many researchers have their sights set on hydrogen as an alternative energy source to fossil fuels such as oil, natural gas and coal that contain carbon, pollute the environment and contribute to global warming.

nown to be the most abundant element in the universe, hydrogen is considered an ideal energy carrier - not to mention that it's clean, environmentally friendly and non-toxic. However, it has been difficult to find materials that can efficiently and safely store and release it with fast kinetics under ambient temperature and pressure.

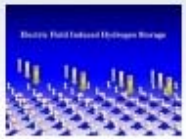
The team of researchers from Virginia Commonwealth University ; Peking University in Beijing; and the Chinese Academy of Science in Shanghai; have developed a process using an electric field that can significantly improve how hydrogen fuel is stored and released.

Physics

Hydrogen Storage Systems to Get Innovation

Applying electric fields can benefit the process

By **Tudor Vieru**, Science Editor
February 3rd, 2010, 11:52 GMT



ENLARGE

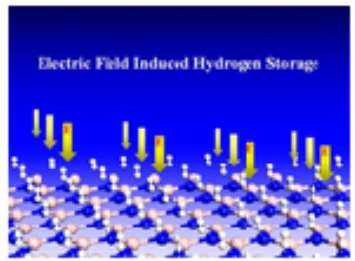
One of the main reasons why hydrogen-powered vehicles are not the norm in our world today is the fact that batteries and fuel cells are not yet efficient enough at delivering their charge. In addition, reloading them can be a very complicated and time-consuming process, and this is why physicists have been working on ways of improving the thermodynamics and reversibility of hydrogen-storing materials. There is also an ongoing effort to make them less complex, and therefore cheaper, and a team of scientists from the US and China may already be on to something, ScienceDaily informs.

The team developed a theoretical model that could lead to the creation of simpler, more efficient hydrogen-storage materials in the near future. The scientists argue that using an electric field on these materials could significantly improve the rate at which they store and release the chemicals. The main trouble with hydrogen fuels is getting the substances holding them to release it with fast kinetics under ambient temperature and pressure. At this point, these materials require a number of special conditions that cannot be satisfied within a personal vehicle, and need the controlled confines of a lab to work.

Green Car Congress
Energy, Technologies, Issues and Policies for Sustainable Mobility

US and China Researchers Show New Approach to Hydrogen Storage; Applied Electric Field Can Significantly Improve H2 Storage and Reversibility Properties of Polarizable Substrates

3 February 2010



An applied electric field polarizes hydrogen molecules and the substrate, inducing hydrogen absorption with good thermodynamics and kinetics. Image courtesy of Qian Wang, Ph.D./VCU. Click to enlarge.

Using density functional theory, a team of researchers from Virginia Commonwealth University; Peking University in Beijing; and the Chinese Academy of Science in Shanghai has shown that an applied electric field can substantially improve the hydrogen storage properties of polarizable substrates. The new approach could make the synthesis of hydrogen fuel storage materials less complicated and improve the thermodynamics and reversibility of the system.

They demonstrated their new concept by adsorbing a layer of hydrogen molecules on a number of nanomaterials. When one layer of H_2 molecules is adsorbed on a BN sheet, the binding energy per H_2 molecule increases from 0.03 eV/H_2 in the field-free case to 0.14 eV/H_2 in the presence of an electric field of 0.045 au (atomic units). The corresponding gravimetric density of 7.5 wt% is consistent with the 6 wt% system target set by Department of Energy for 2010.

Science News

New Graphene-based, Nano-material Has Magnetic Properties

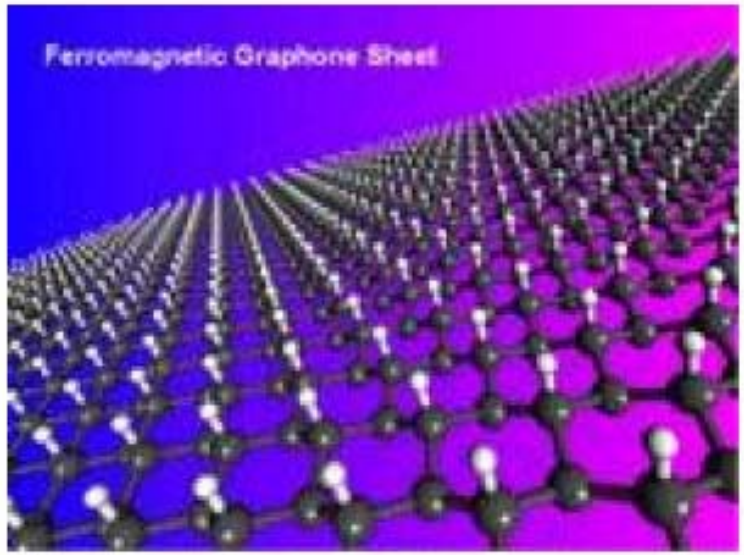
ScienceDaily (Sep. 2, 2009) — An international team of researchers has designed a new graphite-based, magnetic nano-material that acts as a semiconductor and could help material scientists create the next generation of electronic devices like microchips.

See also:

Matter & Energy
- Materials Science
- Electronics
- Nanotechnology

Computers & Math
- Hacking
- Encryption

The team of researchers from Virginia Commonwealth University; Peking University in Beijing, China; the Chinese Academy of Science in Shanghai, China; and Tohoku University in Sedai, Japan; used theoretical computer modeling to design the new material they called graphone, which is derived from an existing material known as graphene.



Ferromagnetic graphone sheet. (Credit: Puru Jena/VCU)

Researchers design new graphene-based, nano-material with magnetic properties

Published: Wednesday, September 2, 2009 - 11:17 in Physics & Chemistry

Related images
(click to enlarge)

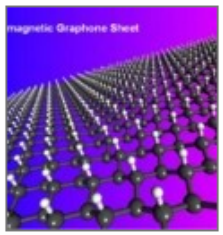


Image courtesy of Puru Jena/VCU

An international team of researchers has designed a new graphite-based, magnetic nano-material that acts as a semiconductor and could help material scientists create the next generation of electronic devices like microchips. The team of researchers from Virginia Commonwealth University; Peking University in Beijing, China; the Chinese Academy of Science in Shanghai, China; and Tohoku University in Sedai, Japan; used theoretical computer modeling to design the new material they called graphone, which is derived from an existing material known as graphene.

Share

Email to a Friend
Print this Article
Twitter
Facebook
Delicious
StumbleUpon
Reddit
Digg

Other sources

New graphene-based nanomaterial with magnetic properties designed from Physorg
17 hours ago

2 more sources Click

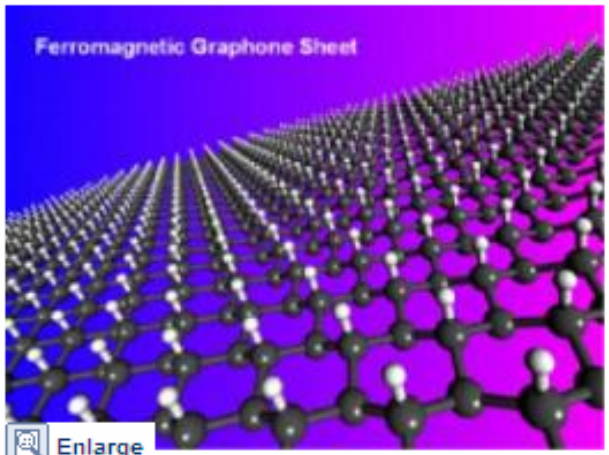
Latest Science Newsletter

Get the latest and most popular science news articles of the week in your Inbox!

Enter your email Subscribe

New graphene-based nanomaterial with magnetic properties designed

September 2nd, 2009



Enlarge

This is a ferromagnetic graphone sheet. Credit: Image courtesy of Puru Jena/VCU

An international team of researchers has designed a new graphite-based, magnetic nano-material that acts as a semiconductor and could help material scientists create the next generation of electronic devices like microchips.

September 2nd, 2009 all stories
Nanotechnology / Nanomaterials

Comments: 1
Rank: 3/5 after 13 votes

Thumb This Up!
Digg submit
Share it:

Rating: 3/5 after 13 votes

My Today's Top Story (learn m

Related Stories

Researchers work to design the next microchip

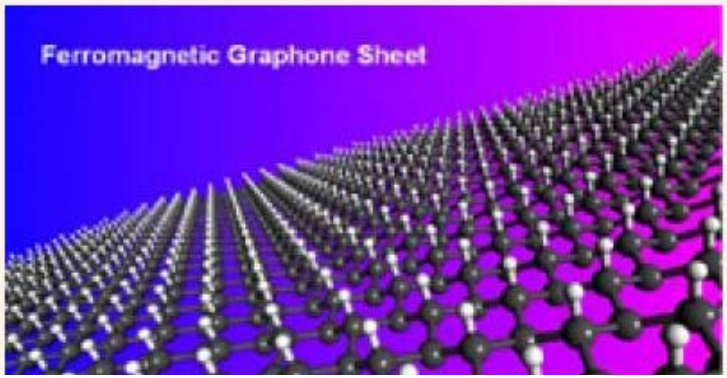
posted on: september 2, 2009 - 3:50pm

An international team of researchers has designed a new graphite-based, magnetic nano-material that acts as a semiconductor and could help material scientists create the next generation of electronic devices like microchips.

The team of researchers from Virginia Commonwealth University; Peking University in Beijing, China; the Chinese Academy of Science in Shanghai, China; and Tohoku University in Sedai, Japan; used theoretical computer modeling to design the new material they called graphone, which is derived from an existing material known as graphene.

Graphene, created by scientists five years ago, is 200 times stronger than steel, its electrons are highly mobile and it has unique optical and transport properties. Some experts believe that graphene may be more versatile than carbon nanotubes, and the ability to make graphene magnetic adds to its potential for novel applications in spintronics. Spintronics is a process using electron spin to synthesize new devices for memory and data processing.

Although graphene's properties can be significantly modified by introducing defects and by saturating with hydrogen, it has been very difficult for scientists to manipulate the structure to make it magnetic.



Similar Articles On This Topic:

- Researchers design new graphene-based, nano-material with magnetic properties
- Researchers design new graphene-based, nanomaterial with magnetic properties
- New and improved graphane could replace silicon in computer chips
- From graphene to graphane, now the possibilities are endless
- Camera flash turns an insulating material into a conductor

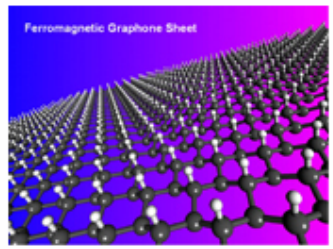
Popular Today:

- Our eyes are being manipulated, by our minds
- Security blankets: Materialism and death

Researchers Develop New Graphite-Based Magnetic Nanomaterial

Posted in | Nanomagnetics | Nanomaterials

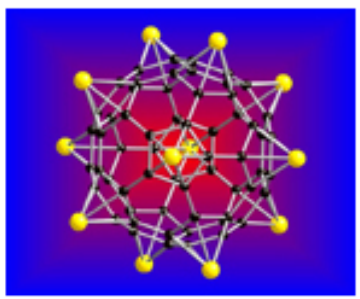
An international team of researchers has designed a new graphite-based, magnetic nano-material that acts as a semiconductor and could help material scientists create the next generation of electronic devices like microchips.



The team of researchers from Virginia Commonwealth University; Peking University in Beijing, China; the Chinese Academy of Science in Shanghai, China; and Tohoku University in Sedai, Japan; used theoretical computer modeling to design the new material they called graphone, which is derived from an existing material known as graphene.

A New Hydrogen Fuel Storage System

NanoTechnology



Virginia Commonwealth University researchers have developed a new storage system to hold large quantities of hydrogen fuel that may one day power cars in a more cost-effective and consumer-friendly way.

SCIENCE NEWS Online
THE WEEKLY NEWSMAGAZINE OF SCIENCE

Week of Aug. 19, 2006; Vol. 170, No. 8

Hydrogen hopes in carbon shells

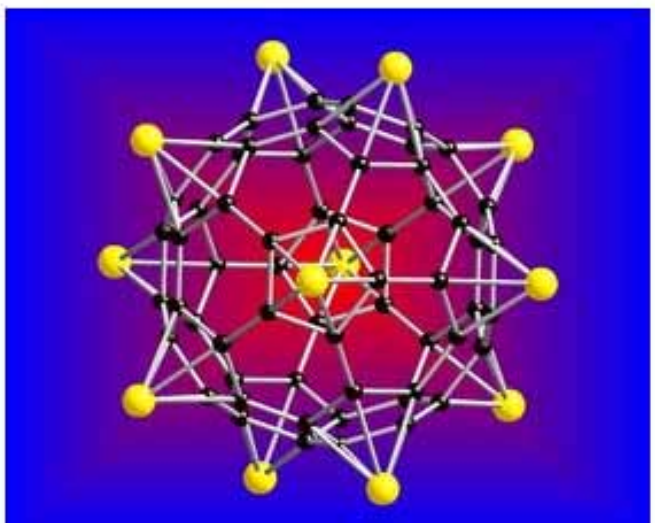
Peter Weiss

Lithium atoms added to buckyball surfaces bestow on these molecules a remarkable capacity to store hydrogen.

References and sources for this article

July 24, 2006

Developing Alternatives to Fossil Fuels



Virginia Commonwealth University researchers have developed a new storage system to hold large quantities of hydrogen fuel that may one day power cars in a more cost-effective and consumer-friendly way.

Green Car Congress

Energy, Technologies, Issues and Policies for Sustainable Mobility

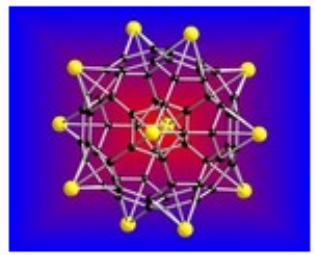
25 June 2007

NANOTECH

Researchers Design Lithium-Coated Buckyball with 13 wt.% Hydrogen Storage

JULY 24, 2006

Researchers at Virginia Commonwealth University have described a potential new hydrogen storage system for vehicular applications based on lithium-coated buckyballs. The new material promises a gravimetric storage density of 13 wt.% &mdash



A lithium-coated fullerene (buckyball) as a potential material for hydrogen storage. Yellow represents lithium atoms, and black represents carbon atoms. Click to enlarge.

From the Dashboard

Dusseldorf Orders Hydrogen Fuel-Cell MidiBus from Hydrogenics

Cummins to Produce Light-Duty Diesel Engine Family for

Lithium 'Buckyballs' As Hydrogen Storage Medium

Source: **Virginia Commonwealth University**
[Jul 27, 2006]

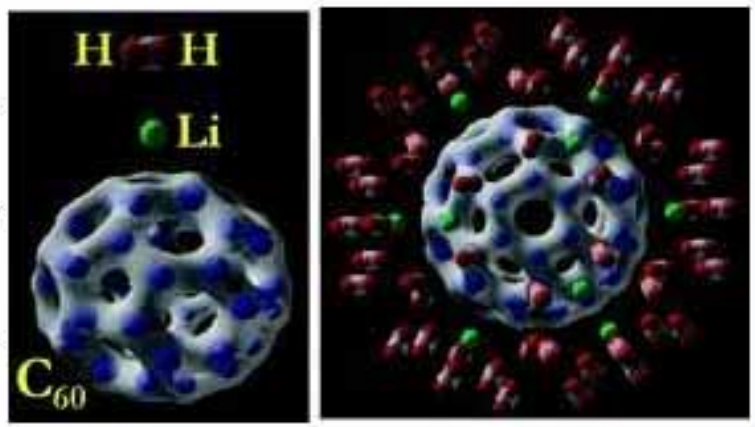
SYNOPSIS: Industry standards require materials that store hydrogen to have a high gravimetric density of 9 weight percent, and high volumetric density of 70 grams/liter. The material developed at Virginia Commonwealth University can store 13 percent.

Energia

Moléculas de carbono com cobertura de lítio armazenam hidrogênio

Da redação
28/07/2006

Pesquisadores da Universidade da Virgínia, Estados Unidos, desenvolveram um novo sistema de armazenamento sólido de hidrogênio que consegue guardar grandes quantidades do combustível limpo que, espera-se, um dia deverá alimentar os motores dos carros e caminhões, substituindo a gasolina e o óleo diesel.



Provavelmente ainda não é o "tanque definitivo" de hidrogênio. Mas os cientistas conseguiram determinar a composição teórica de um material que consegue aprisionar uma grande quantidade de átomos de hidrogênio para cada átomo de material ativo.

Search | Members | Calendar | Help | Home

Search by username

Not logged in - Login | Register

Developing Alternatives To Fossil Fuels

Moderated by: mmmike

New Topic | Reply | Print

Author	Post
Canadian Admin	Posted: Wed Jul 26th, 2006 02:46 AM — Quote | Reply

Virginia Commonwealth University researchers have developed a new storage system to hold large quantities of hydrogen fuel that may one day power cars in a more cost-effective and consumer-friendly way.

This theoretical research moves scientists another step closer in the exploration of alternative fuel sources and methods to store hydrogen fuel.

Menu

News
- Home
- Search
- Topics
- Stories Archive
- Submit News
- PO Mobile NEW!

Discussions
- Last 24 Hours
- Code of Conduct
- Forums
- Blog

Researchers Design Lithium-Coated Buckyball with 13 wt.% Hydrogen Storage

Researchers at Virginia Commonwealth University have described a potential new hydrogen storage system for vehicular applications based on lithium-coated buckyballs. The new material promises a gravimetric storage density of 13 wt.% &mdash

greencarcongress

Posted on Tuesday, July 25 @ 03:23:04 EDT by Graeme

Developing Alternatives To Fossil Fuels

Virginia Commonwealth University researchers have developed a new storage system to hold large quantities of hydrogen fuel that may one day power cars in a more cost-effective and consumer-friendly way.

This theoretical research moves scientists another step closer in the exploration of alternative fuel sources and methods to store **hydrogen** fuel.

Science News

Biology
Brain
Health
Space
Technology

Research Author: Virginia Commonwealth University Last Updated: Jul 31st, 2006 - 05:17:52

Developing Alternatives to Fossil Fuel
By Virginia Commonwealth University
Jul 31, 2006, 07:00

Email this article
Printer friendly page

DEVELOPING ALTERNATIVES TO FOSSIL FUELS
A novel approach: Lithium-coated buckyballs to store **hydrogen** molecules in large quantities and
operate under moderate temperatures and pressures

Environmental PROTECTION
Management And Problem Solving For Environmental Professionals

News & Trends

Researchers: Hydrogen Storage System Could Power Cars Cost-Effectively

Virginia Commonwealth University (VCU) researchers announced on July 24 they have developed a new storage system to hold large quantities of hydrogen fuel that could one day power cars in a more cost-effective and consumer-friendly way.

This theoretical research moves scientists another step closer in the exploration of alternative fuel sources and methods to store hydrogen fuel.

[August 03, 2006]

Developing Alternatives to Fossil Fuels

(Space Daily Via Thomson Dialog NewsEdge) Virginia Commonwealth University researchers have developed a new storage system to hold large quantities of hydrogen fuel that may one day power cars in a more cost-effective and consumer-friendly way.

TERRADAILY
NEWS ABOUT PLANET EARTH

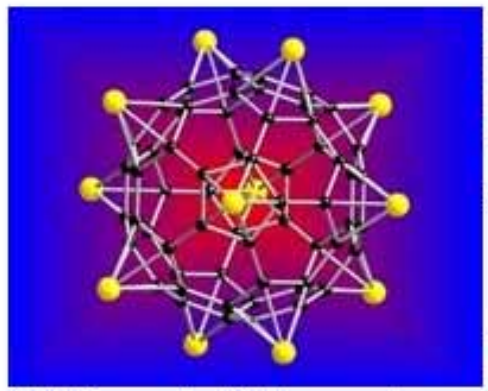
ENERGY TECH

Developing Alternatives to Fossil Fuels

by Staff Writers
Richmond VA (SPX) Aug 03, 2006

Virginia Commonwealth University researchers have developed a new storage system to hold large quantities of hydrogen fuel that may one day power cars in a more cost-effective and consumer-friendly way. Newswise ?Virginia Commonwealth University researchers have developed a new storage system to hold large quantities of hydrogen fuel that may one day power cars in a more cost-effective and consumer-friendly way.

This theoretical research moves scientists another step closer in the exploration of alternative fuel sources and methods to store hydrogen fuel.



A lithium-coated fullerene, also known as a C60 cluster, as a potential material for hydrogen storage. Yellow represents lithium atoms, and black represents carbon atoms.

OAK RIDGE NATIONAL LABORATORY

Managed by UT Battelle for the Department of Energy

ORNL in the News

A service of ORNL Research Libraries

Tuesday, July 25, 2006

- Receive Morning Email Of *ORNL In The News*
- Archives
- XML RSS Feed
- Press Releases

OAK RIDGE NATIONAL LABORATORY

Light Looks At Your Health

(R&D Magazine) Photonic technology is starting to offer the rapid and accurate results demanded for medical applications...Several different approaches aim to leverage the advantages of photonic technology to the problem of rapid and accurate blood analysis...The Abaxis instrument provides a panel analysis from a single 100 µL drop of blood. Starting from a concept originally licensed from NASA, Washington, D.C., and **Oak Ridge National Laboratory**, Tenn., the system uses disposable plastic rotors as miniature chemistry labs...7/25

NATIONAL & INTL:

Meeting Rice, Olmert Says Offensive Will Continue

Jerusalum (AP) Secretary of State Condoleezza Rice, leading the first high-level U.S. diplomatic mission since war broke out in Lebanon, said Tuesday the time has come for a new Middle East and an urgent end to the violence hanging over the region...7/25 [Registration Required]

Bush Orders Humanitarian Aid To Lebanon, But Opposes Cease-Fire

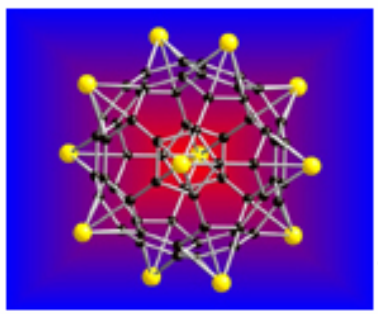
Washington (AP) President Bush has ordered helicopters and ships to Lebanon to provide humanitarian aid, but he still opposes an immediate cease-fire that could give relief from a 13-day-old Israeli bombing campaign...7/25

Developing Alternatives To Fossil Fuels

(Newswise) Virginia Commonwealth University researchers have developed a new storage system to hold large quantities of hydrogen fuel that may one day power cars in a more cost-effective and consumer-friendly way...7/24

A New Hydrogen Fuel Storage System

NanoTechnology



Virginia Commonwealth University researchers have developed a new storage system to hold large quantities of hydrogen fuel that may one day power cars in a more cost-effective and consumer-friendly way.

This theoretical research moves scientists another step closer in the exploration of alternative fuel sources and methods to store hydrogen fuel.

Lithium buckyballs to store hydrogen?

2006-8-7

Hydrogen fuel, which is an ideal energy carrier and environmentally friendly because it releases only water in the air, might one day power our cars and reduce our dependency on fossil fuels. But first we need to find ways to produce it — and to store it. And now, researchers at Virginia Commonwealth University (VCU) have developed a new storage system for hydrogen based on lithium-coated buckyballs. The clusters they've designed — by using computer modeling — are composed of 12 lithium atoms and 60 carbon atoms, are very stable and can store up to 120 hydrogen atoms in molecular form. The researchers now have to prove that hydrogen can be stored in the lithium-coated fullerenes.

News

- Technology Trends

News & Events

- 2006 Shanghai Fair on International Technology Transfer & Cooperation was successfully held
- Warmly congratulate the opening of No. 11 model route of Super Capacitor Bus

Our partner

- Shanghai Academy of Science & Technology

Lithium buckyballs to store hydrogen?

Story Tags: hydrogen, lithium, Storage

Excerpt: In an effort to reduce our dependency on fossil fuels, researchers at Virginia Commonwealth University have developed a new storage system for hydrogen based on lithium-coated buckyballs. So will we see one day lithium-based tanks in future hydrogen refueling stations? It's too early to be sure. Read more... - Read More

News by category XML

- Nano and Quantum Physics
- Technology
- Applied Physics
- Space and Earth science
- Electronic Devices
- Striking Research and Developments

Most popular

- World's First Single-Atom-Thick Fabric

'Nano-bullet' targets cancer tumors

October 29, 2004

Latest News By E-mail | Print this news

Virginia Commonwealth University physicists, working with one of the most precious materials on Earth – gold -- and with one of the most common - sand -- have created a so-called "nano-bullet" that targets tumors and may help scientists develop non-invasive cancer treatments.

- Introduction
- News
- Products
- Directory
- Press Kit
- Events
- Gallery
- Interviews
- Best Of
- Career Center
- Glossary
- Possible Futures
- About Us
- Advertise
- Your Account

October 20th, 2004

Nano-bullet for non-invasive treatment of cancers

Abstract:
Virginia Commonwealth University physicists have created a so-called "nano-bullet" that targets tumors and may help scientists develop non-invasive cancer treatments.

Story:

VCU scientists studying nano-bullet for non-invasive treatment of cancers

Richmond, VA, October 20, 2004

Virginia Commonwealth University physicists, working with one of the most precious materials on Earth – gold -- and with one of the most common – sand -- have created a so-called "nano-bullet" that targets tumors and may help scientists develop non-invasive cancer treatments.

The scientists found that when gold particles are reduced to a few nano-meters -- just billionths of a meter -- they become highly reactive and readily bind to silica clusters, allowing the cluster to absorb infrared light and create enough heat to potentially kill cancer tumors. Silica is the main element in sand.

Medical News Categories

- Home Page
- **New** Medical A to Z
- Express News Submit
- Child Health News
- Disease/Infection News
- Healthcare News
- Medical Condition News
- Devices/Technology
- Medical Patent News
- Medical Research News
- Medical Study News
- Medical Science News
- Medical Procedure News
- Men's Health News

News-Medical.Net

Nano-bullet for non-invasive treatment of cancers

Posted By: News-Medical in Medical Science News
Published: Wednesday, 20-Oct-2004

Printer Friendly Email to a Friend

Virginia Commonwealth University physicists, working with one of the most precious materials on Earth – gold -- and with one of the most common – sand -- have created a so-called "nano-bullet" that targets tumors and may help scientists develop non-invasive cancer treatments.

The scientists found that when gold particles are reduced to a few nano-meters -- just billionths of a meter -- they become highly reactive and readily bind to silica clusters, allowing the cluster to absorb infrared light and create enough heat to potentially kill cancer tumors. Silica is the main element in sand.

News.NanoApex™

Nano-bullet for non-invasive treatment of cancers
Date: Wednesday, October 20, 2004 @ 22:54:57 PDT
Topic: nanobiomed

Virginia Commonwealth University [profile] physicists, working with one of the most precious materials on Earth – gold -- and with one of the most common – sand -- have created a so-called "nano-bullet" that targets tumors and may help scientists develop non-invasive cancer treatments.

The scientists found that when gold particles are reduced to a few nano-meters -- just billionths of a meter -- they become highly reactive and readily bind to silica clusters, allowing the cluster to absorb infrared light and create enough heat to potentially kill cancer tumors. Silica is the main element in sand.

Nano-bullet for non-invasive treatment of cancers

Industry News

Event Calendar

Job Listings

Resume Listings

Related Site Links

What is MEMS?

Beginner's Guide

Glossary

Material Database

Discussion Groups

Nano-bullet for non-invasive treatment of cancers

The advantage of using smaller particles is that they can be inserted into any part of the human body and treat cancer cells in their infancy

Virginia Commonwealth University physicists, working with one of the most precious materials on Earth - gold -- and with one of the most common - sand -- have created a so-called "nano-bullet" that targets tumors and may help scientists develop non-invasive cancer treatments.

The scientists found that when gold particles are reduced to a few nano-meters -- just billionths of a meter -- they become highly reactive and readily bind to silica clusters, allowing the cluster to absorb infrared light and create enough heat to potentially kill cancer tumors. Silica is the main element in sand.

Nanotechnology News

Virginia Commonwealth University Create Nano-Bullet to Treat Cancer

Virginia Commonwealth University physicists, working with one of the most precious materials on Earth – gold -- and with one of the most common – sand -- have created a so-called "nano-bullet" that targets tumors and may help scientists develop non-invasive cancer treatments.

The scientists found that when gold particles are reduced to a few nano-meters -- just billionths of a meter -- they become highly reactive and readily bind to silica clusters, allowing the cluster to absorb infrared light and create enough heat to potentially kill cancer tumors. Silica is the main element in sand.

Nano-bullet for non-invasive treatment of cancers

Virginia Commonwealth University physicists, working with one of the most precious materials on Earth ? gold -- and with one of the most common ? sand -- have created a so-called ?nano-bullet? that targets tumors and may help scientists develop non-invasive cancer treatments.

News
· Top Headlines
· World News
· US News
· Sports Headlines
· Odd News

Medical News
· General Medical News

Nano-bullet for non-invasive treatment of cancers

Virginia Commonwealth University physicists, working with one of the most precious materials on Earth ? gold -- and with one of the most common ? sand -- have created a so-called ?nano-bullet? that targets tumors and may help scientists develop non-invasive cancer treatments.

Nano-Bullet For Non-Invasive Treatment of Cancers

By: Svidinenko (Svidinenko) 2004.10.21

Virginia Commonwealth University physicists, working with one of the most precious materials on Earth – gold -- and with one of the most common – sand -- have created a so-called "nano-bullet" that targets tumors and may help scientists develop non-invasive cancer treatments.

The scientists found that when gold particles are reduced to a few nano-meters -- just billionths of a meter -- they become highly reactive and readily bind to silica clusters, allowing the cluster to absorb infrared light and create enough heat to potentially kill cancer tumors. Silica is the main element in sand.

Read original article

Source: NanoApex

The NanoTechnology Group Inc. | home

NANO

The NanoTechnology Group Inc.

Press Releases:

Please send your press releases by email to:
Judith.LightFeather@TNTG.org

VCU scientists studying nano-bullet for non-invasive treatment of cancers

Richmond, VA, October 20, 2004

Virginia Commonwealth University physicists, working with one of the most precious materials on Earth – gold -- and with one of the most common – sand -- have created a so-called "nano-bullet" that targets tumors and may help scientists develop non-invasive cancer treatments.

The scientists found that when gold particles are reduced to a few nano-meters -- just billionths of a meter -- they become highly reactive and readily bind to silica clusters, allowing the cluster to absorb infrared light and create enough heat to potentially kill cancer tumors. Silica is the main element in sand.

...read the wave™

archive news...archiv pressemeldungen
archief nieuws berichten
www.nanoTsunami.com

Nano Medicine : USA

Nano-bullet for non-invasive treatment of cancers

Virginia Commonwealth University physicists, working with one of the most precious materials on Earth — gold -- and with one of the most common — sand -- have created a so-called "nano-bullet" that targets tumors and may help scientists develop non-invasive cancer treatments.

The scientists found that when gold particles are reduced to a few nano-meters -- just billionths of a meter -- they become highly reactive and readily bind to silica clusters, allowing the cluster to absorb infrared light and create enough heat to potentially kill cancer tumors. Silica is the main element in sand...*read the wave*

Bioethics News

Nano-Bullet For Non-Invasive Treatment of Cancers

10/21/2004

Virginia Commonwealth University physicists, working with one of the most precious materials on Earth – gold -- and with one of the most common – sand -- have created a so-called "nano-bullet" that targets tumors and may help scientists develop non-invasive cancer treatments

(News-Medical)

Bioethics News Highlights

Nano-Bullet For Non-Invasive Treatment of Cancers —
Virginia Commonwealth University physicists, working with one of the most precious materials on Earth—gold—and with one of the most common—sand—have created a so-called "nano-bullet" that targets tumors and may help scientists develop non-invasive cancer treatments. The scientists found that when gold particles are reduced to a few nano-meters—just billionths of a meter—they become highly reactive and readily bind to silica clusters, allowing the cluster to absorb infrared light and create enough heat to potentially kill cancer tumors....
News-Medical.Net — http://www.news-medical.net/?id=5695

Nano-bullet for non-invasive treatment of cancers

Industry News
Event Calendar
Job Listings
Resume Listings
Related Site Links
What is MEMS?
Beginner's Guide
Glossary
Material Database
Discussion Groups
Post a News Item

Nano-bullet for non-invasive treatment of cancers

The advantage of using smaller particles is that they can be inserted into any part of the human body and treat cancer cells in their infancy

Virginia Commonwealth University physicists, working with one of the most precious materials on Earth - gold -- and with one of the most common - sand -- have created a so-called "nano-bullet" that targets tumors and may help scientists develop non-invasive cancer treatments.

The scientists found that when gold particles are reduced to a few nano-meters -- just billionths of a meter -- they become highly reactive and readily bind to silica clusters, allowing the cluster to absorb infrared light and create enough heat to potentially kill cancer tumors. Silica is the main element in sand.

For more information: http://www.news-medical.net/?id=5695