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| http://images.magnetmail.net/images/template/acs/gold.gifIn This Edition

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[PressPac Archives](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966905&m=1579266&u=ACS&j=7662573&s=http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_PRESSPACS&node_id=223&use_sec=false&sec_url_var=region1&__uuid=a0c923e3-c385-4d96-bdc8-eadaa07eb02f)      | **ACS NEWS SERVICEWeekly Press Package - October 19, 2011 ALL CONTENT IS FOR IMMEDIATE RELEASE  Please credit the individual journal or the American Chemical Society as the source for this information.**Here is the latest American Chemical Society (ACS) Weekly PressPac from the Office of Public Affairs. It has news from ACS’ 41 peer-reviewed journals and Chemical & Engineering News.Science Inquiries: Michael Woods, editorm\_woods@acs.org202-872-6293General Inquiries: Michael Bernsteinm\_bernstein@acs.org 202-872-6042  http://images.magnetmail.net/images/clients/ACS/IYC(1).jpgARTICLE #1 **FOR IMMEDIATE RELEASE****Home washing machines: Source of potentially harmful ocean “microplastic” pollution**Environmental Science & Technology

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|  http://images.magnetmail.net/images/clients/ACS/101911washing.jpgHome washing machines: Source of potentially harmful ocean “microplastic” pollutionCredit: iStock  |

Scientists are reporting that household washing machines seem to be a major source of so-called “microplastic” pollution — bits of polyester and acrylic smaller than the head of a pin — that they now have detected on ocean shorelines worldwide. Their report describing this potentially harmful material appears in ACS’ journal Environmental Science & Technology.Mark Browne and colleagues explain that the accumulation of microplastic debris in marine environments has raised health and safety concerns. The bits of plastic contain potentially harmful ingredients which go into the bodies of animals and could be transferred to people who consume fish. Ingested microplastic can transfer and persist into their cells for months. How big is the problem of microplastic contamination? Where are these materials coming from? To answer those questions, the scientists looked for microplastic contamination along 18 coasts around the world and did some detective work to track down a likely source of this contamination.They found more microplastic on shores in densely populated areas, and identified an important source — wastewater from household washing machines. They point out that more than 1,900 fibers can rinse off of a single garment during a wash cycle, and these fibers look just like the microplastic debris on shorelines. The problem, they say, is likely to intensify in the future, and the report suggests solutions: “Designers of clothing and washing machines should consider the need to reduce the release of fibers into wastewater and research is needed to develop methods for removing microplastic from sewage.”The authors acknowledge funding from [Leverhulme Trust](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966906&m=1579266&u=ACS&j=7662573&s=http://www.leverhulme.ac.uk/), [EICC (University of Sydney)](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966907&m=1579266&u=ACS&j=7662573&s=http://sydney.edu.au/science/bio/eicc/about/) and [Hornsby Shire Council](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966908&m=1579266&u=ACS&j=7662573&s=http://www.hornsby.nsw.gov.au/).

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|  http://images.magnetmail.net/images/clients/ACS/101211ESTsmall.jpg[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966909&m=1579266&u=ACS&j=7662573&s=http://web.1.c2.audiovideoweb.com/1c2web3536/101211EST.jpg) for high-resolution image |

ARTICLE #1 **FOR IMMEDIATE RELEASE**“Accumulation of Microplastic on Shorelines Worldwide: Sources and Sinks”[DOWNLOAD FULL TEXT ARTICLE](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966910&m=1579266&u=ACS&j=7662573&s=http://pubs.acs.org/stoken/presspac/presspac/full/10.1021/es201811s) CONTACT:Mark Browne, Ph.D.University College DublinDublin, IrelandPhone: +353-870-916-484Fax: +353-1-716-1152Email: mark.browne@ucd.ie [To Top](#top)http://images.magnetmail.net/images/clients/ACS/goldline.gifARTICLE #2 **FOR IMMEDIATE RELEASE****Turning up the heat to kill cancer cells: “The Lance Armstrong effect”**Molecular Pharmaceutics

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|  http://images.magnetmail.net/images/clients/ACS/101911Lance.jpgTurning up the heat to kill cancer cells: “The Lance Armstrong effect”Credit: Wikimedia Commons, John Hallett |

The “Lance Armstrong effect” could become a powerful new weapon to fight cancer cells that develop resistance to chemotherapy, radiation and other treatments, scientists say in a report in the ACS journal Molecular Pharmaceutics.Robert Getzenberg and Donald Coffey explain that many advances have occurred in the 40 years since President Nixon declared a “War on Cancer” on December 23, 1971. However, cancer remains a leading cause of death worldwide, claiming almost 8 million lives annually. Patients with some forms of cancer respond well to treatment, while others have disease that becomes resistant to every known treatment. Patients with testicular cancer have a high survival rate — more than 70 percent — even if the cancer metastasizes, or spreads. For example, Lance Armstrong, the famous cyclist, beat metastatic testicular cancer that spread to his lungs and brain, and then went on to win the Tour de France a record seven consecutive times. But patients with pancreatic cancer have only a 25 percent survival rate in the first year and a 6 percent survival rate by the fifth year after diagnosis. Why is this?Getzenberg and Coffey realized that the microenvironment of testicular cancer cells was a little different. Testicles are usually several degrees cooler than the rest of the body, owing to their position outside the body. When cancer cells from the testicles spread to other organs, such as the lungs or brain, they encounter a warmer environment. The researchers propose that this warmth shocks the tumor cells, making them more susceptible to conventional cancer therapies, which leads to a higher survival rate among testicular cancer patients. This is the so-called “Lance Armstrong effect.” The researchers describe tests now underway on nanoparticle therapies to specifically heat other types of tumors above their normal temperatures to see whether this effect holds true for non-testicular cancers.

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|  http://images.magnetmail.net/images/clients/ACS/101911MPsmall.jpg[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966911&m=1579266&u=ACS&j=7662573&s=http://web.1.c2.audiovideoweb.com/1c2web3536/101911MP.jpg) for high-resolution image |

ARTICLE #2 **FOR IMMEDIATE RELEASE**“Changing the Energy Habitat of the Cancer Cell in Order to Impact Therapeutic Resistance”[DOWNLOAD FULL TEXT ARTICLE](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966912&m=1579266&u=ACS&j=7662573&s=http://pubs.acs.org/stoken/presspac/presspac/full/10.1021/mp200310u) CONTACT:Robert Getzenberg, Ph.D.The Johns Hopkins University School of MedicineBaltimore, MD 21287Phone: 410-502-3137Email: rgetzen1@jhmi.edu [To Top](#top)http://images.magnetmail.net/images/clients/ACS/goldline.gif ARTICLE #3 **FOR IMMEDIATE RELEASENew tool to help surgeons remove more cancer tissue during brain surgery**Analytical Chemistry

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|  http://images.magnetmail.net/images/clients/ACS/101911braincancersmall.jpgNew tool to help surgeons remove more cancer tissue during brain surgeryCredit: iStock |

Scientists are reporting development and successful initial testing of a new tool that tells whether brain tissue is normal or cancerous while an operation is underway, so that surgeons can remove more of the tumor without removing healthy tissue, improving patients’ survival. The report appears in ACS’ journal Analytical Chemistry.Zoltán Takáts and colleagues point out that cancer can recur if tumor cells remain in the body after surgery. As a precaution, surgeons typically remove extra tissue surrounding a breast, prostate and other tumors in the body. But neurosurgeons face severe limitations because removing extra tissue can impair the patient’s memory, mobility and other vital functions. Neurosurgeons thus strive to precisely identify the tumor margins during brain surgery. Current methods take too long and are unreliable. To overcome these challenges, the researchers developed a new tool that can identify the margin between cancerous and healthy tissue in half the time previously needed.They describe linking a mainstay surgical tool termed an ultrasonic aspirator — used to break up and suction tissue — to a modified version of a standard laboratory tool called a mass spectrometer. Their tests proved successful on human brain samples. “Besides brain surgery, the method has application potential in the field of the surgery of organs including liver, pancreas or kidney,” say the researchers.

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|  http://images.magnetmail.net/images/clients/ACS/101211ACsmall.jpg[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966913&m=1579266&u=ACS&j=7662573&s=http://web.1.c2.audiovideoweb.com/1c2web3536/101211AC.jpg) for high-resolution image |

ARTICLE #3 **FOR IMMEDIATE RELEASE**“Real Time Analysis of Brain Tissue by Direct Combination of Ultrasonic Surgical Aspiration and Sonic Spray Mass Spectrometry”[DOWNLOAD FULL TEXT ARTICLE](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966914&m=1579266&u=ACS&j=7662573&s=http://pubs.acs.org/stoken/presspac/presspac/full/10.1021/ac201251s) CONTACT:Zoltán Takáts, Ph.D.Justus Liebig UniversitätGiessen, GermanyPhone: +49-641-99-34806Fax: +49-641-99-34809Email: Zoltan.Takats@anorg.Chemie.uni-giessen.de  [To Top](#top)http://images.magnetmail.net/images/clients/ACS/goldline.gif ARTICLE #4 **FOR IMMEDIATE RELEASE: A PressPac Instant Replay\*An advance toward ultra-portable electronic devices**Journal of the American Chemical Society

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|  http://images.magnetmail.net/images/clients/ACS/101911electronicssmall.jpgAn advance toward ultra-portable electronic devicesCredit: iStock |

Scientists are reporting a key advance toward the long-awaited era of “single-molecule electronics,” when common electronic circuits in computers, smart phones, audio players and other devices may shrink to the size of a grain of sand. The breakthrough is a method for creating and attaching the tiny wires that will connect molecular components, reports a new study in the Journal of the American Chemical Society. Yuji Okawa and colleagues write that the “key to single-molecule electronics is connecting functional molecules to each other using conductive nanowires. This involves two issues: how to create conductive nanowires at designated positions, and how to ensure chemical bonding between the nanowires and functional molecules.” That challenge has stymied many researchers, who have struggled to produce wires small enough to use in molecular circuits.The scientists now demonstrate a method that uses the tip of a scanning tunneling microscope to jump-start the formation of a molecule chain. The chain or “wire” spontaneously chemically bonds with other molecular components in the circuit under construction, a process that Okawa and colleagues dub “chemical soldering.” The wiring method can be used to connect molecular switches, memory bits and transistors. The scientists say their technique “will enable us to develop cheaper, higher-performance, and more ecological alternatives to conventional silicon-based devices.”The authors acknowledge funding from the [Japan Society for the Promotion of Science](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966915&m=1579266&u=ACS&j=7662573&s=http://www.jsps.go.jp/english/e-grants/grants.html).

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|  http://images.magnetmail.net/images/clients/ACS/101911JACSsmall(1).jpg[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966916&m=1579266&u=ACS&j=7662573&s=http://web.1.c2.audiovideoweb.com/1c2web3536/101911JACS.jpg) for high-resolution image |

ARTICLE #4 **FOR IMMEDIATE RELEASE**“Chemical Wiring and Soldering toward All-Molecule Electronic Circuitry”[DOWNLOAD FULL TEXT ARTICLE](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966917&m=1579266&u=ACS&j=7662573&s=http://pubs.acs.org/stoken/presspac/presspac/full/10.1021/ja111673x)CONTACT: Yuji Okawa, Ph.D.International Center for Materials Nanoarchitectonics, National Institute for Materials ScienceTsukuba, JapanPhone: +81 29 860 4739E-mail: okawa.yuji@nims.go.jp **\* A previous PressPac item that you may have missed**  [To Top](#top)http://images.magnetmail.net/images/clients/ACS/goldline.gifARTICLE #5 **FOR IMMEDIATE RELEASE****Keeping acrylic paintings clean poses big challenges** Chemical & Engineering News

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| http://images.magnetmail.net/images/clients/ACS/101911CENsmall2.jpg[Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966918&m=1579266&u=ACS&j=7662573&s=http://web.1.c2.audiovideoweb.com/1c2web3536/101911CEN.jpg) for high-resolution image. |

With the first acrylic paintings —the medium made famous by artists like Mark Rothko, Andy Warhol, Robert Motherwell, and David Hockney —pushing 60 years of age, scientists specializing in art conservation are seeking ways to rejuvenate these paintings and keep them looking their best. That’s the topic of an article in the current edition of Chemical & Engineering News (C&EN), the American Chemical Society’s weekly newsmagazine.In the article, C&EN Senior Editor Celia Henry Arnaud explains that acrylic paints were invented in the 1940s, with the first wave of acrylic paintings in museum and private collections now between 50 and 60 years of age. They quickly became an artistic mainstay, along with the familiar oil paints that have been used for centuries. One main difference: Oil paints can take weeks or month to dry. Acrylics, which are water-based, dry fast, often in hours.The additives that hold acrylic paints together in the liquid stage, in tubes and on artists’ brushes and palates, are emerging as a problem. The additives make acrylic paints dirt-collectors, unusually sensitive to soiling over the years. C&EN describes the difficulty that conservators are having in cleaning acrylic paintings, and scientific research on the best ways of keeping acrylics looking fresh and young over the years.ARTICLE #5 **FOR IMMEDIATE RELEASE**"Cleaning Acrylics"This story is available at:[http://pubs.acs.org/cen/science/89/8942sci2.html](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966919&m=1579266&u=ACS&j=7662573&s=http://pubs.acs.org/cen/science/89/8942sci2.html)[To Top](#top)http://images.magnetmail.net/images/clients/ACS/goldline.gif **Journalists’ Resources****Press releases, briefings, and more from ACS’ 242nd National Meeting**[www.eurekalert.org/acsmeet.php](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966920&m=1579266&u=ACS&j=7662573&s=http://www.eurekalert.org/acsmeet.php) [http://www.ustream.tv/channel/acslive](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966921&m=1579266&u=ACS&j=7662573&s=http://www.ustream.tv/channel/acslive%20) **Inside Science News Service**For thoroughly enjoyable multimedia coverage of the science behind the news — a valuable resource for journalists and news media organizations everywhere. [Click here](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966922&m=1579266&u=ACS&j=7662573&s=http://www.insidescience.org/) to visit the Inside Science News website.**Must-reads from C&EN: Shifting Gears on Generic Drugs & More**Mention names like Pfizer, Merck & Co. and GlaxoSmithKline, and people think of firms that discover and sell new medicines. But the market strategies of such pharmaceutical firms is shifting to include a mix of generics and emerging markets. For the full story, contact Michael Bernstein at m\_bernstein@acs.org. **ACS Pressroom Blog** The ACS Office of Public Affairs' [pressroom blog](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966923&m=1579266&u=ACS&j=7662573&s=http://www.acspressblog.com) highlights research from ACS’ 41 peer-reviewed journals and National Meetings. **Bytesize Science Blog** Educators and kids, put on your thinking caps: The American Chemical Society has [a blog for Bytesize Science](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966924&m=1579266&u=ACS&j=7662573&s=http://www.bytesizescience.com), a science podcast for kids of all ages.  **ACS Satellite Pressroom: Daily news blasts on Twitter** The satellite press room has become one of the most popular science news sites on Twitter. To get our news blasts and updates, create a free account at [https://twitter.com/signup](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966925&m=1579266&u=ACS&j=7662573&s=https://twitter.com/signup). Then visit [http://twitter.com/ACSpressroom](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966926&m=1579266&u=ACS&j=7662573&s=http://twitter.com/ACSpressroom) and click the ‘join’ button beneath the press room logo. **C&EN on Twitter**Follow @cenmag <[http://twitter.com/cenmag](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966927&m=1579266&u=ACS&j=7662573&s=http://twitter.com/cenmag)> for the latest news in chemistry and dispatches from our blog, C&ENtral Science <[http://centralscience.org](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966928&m=1579266&u=ACS&j=7662573&s=http://centralscience.org)>.**ACS Press Releases** [Press releases](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966929&m=1579266&u=ACS&j=7662573&s=http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_NEWSRELEASES&node_id=222&use_sec=false&sec_url_var=region1&__uuid=50b5ab93-801d-4d0d-868f-b9507ff9d709) on a variety of chemistry-related topics.**International Year of Chemistry** The 63rd General Assembly of the United Nations proclaimed 2011 the International Year of Chemistry (IYC-2011) to increase global recognition of how http://images.magnetmail.net/images/clients/ACS/IYC(1).jpgchemistry and related sciences contribute to everyday life and the future. [ACS’ IYC site](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966930&m=1579266&u=ACS&j=7662573&s=http://portal.acs.org/portal/Navigate?nodeid=14) is a gateway for information on the global celebration of chemistry and its role in other sciences, literally from astronomy to zoology.[To Top](#top)http://images.magnetmail.net/images/clients/acs/goldline.gif**ACS Videos**The American Chemical Society encourages news organizations, museums, educational organizations, and other web sites to embed links to these videos.**Spellbound: How Kids Became Scientists**

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| http://images.magnetmail.net/images/clients/ACS/Spellbound3.jpg |

The road to a Nobel Prize began for one scientist in elementary school when his father placed a sign on his bedroom door proclaiming him to be a “doctor.” This is just one of the many experiences that helped launch the careers of scientists from diverse backgrounds who are featured in a new ACS video series called [Spellbound: How Kids Became Scientists](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966931&m=1579266&u=ACS&j=7662573&s=http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_ARTICLEMAIN&node_id=1355&content_id=CNBP_028033&use_sec=true&sec_url_var=region1&__uuid=e8e6ee76-0abe-4e78-84c4-3717c995c65e). **Prized Science video series**

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Prized Science: How the Science Behind ACS Awards Impacts Your Life video series is new for 2011! In the first episode, see how Ahmed Zewail, Ph.D., developed a technology that's paving the way for new medicines, new fuels and new materials that will give people longer, healthier, happier lives. Zewail is the winner of the 2011 Priestley Medal. The second episode features the work of David Craik, Ph.D., who made advances toward new drugs for treating health problems that affect millions of people around the world, including antibiotic-resistant bacteria and AIDS. Craik is the winner of the ACS 2011 Ralph F. Hirschmann Award in Peptide Chemistry, sponsored by Merck Research Laboratories. More episodes will appear later in the year. The series is available at the [Prized Science](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966932&m=1579266&u=ACS&j=7662573&s=http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_ARTICLEMAIN&node_id=446&content_id=CTD1_018821&use_sec=true&sec_url_var=region1&__uuid=594bce97-0b05-4df7-b759-1a0f9156c5d8) website and on DVD. **First Living, Dancing Periodic Table of the Elements**

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| http://images.magnetmail.net/images/clients/ACS/Chemists.jpg |

That famous chart displaying the chemical elements that make up everything on Earth — a fixture on the walls of classrooms and labs — literally comes alive in this new video from the American Chemical Society (ACS). [Chemists Can Dance!](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966933&m=1579266&u=ACS&j=7662573&s=http://bytesizescience.com/index.cfm/2011/3/29/The-Chemistry-Dance) features scores of chemists wearing symbols representing the elements, kicking up their heels to the tune of an original rap song. It's all part of ACS's celebration of the International Year of Chemistry. Check out the fun and share the link.**A Day Without Chemistry** Imagine a day without cars, electric lights, TV, telephones, safe food, and water, medicine, clothing, your house, and thousands of other familiar objects that make up modern society. Do it, and you are imagining a day in a world without chemistry. ACS explores that thought-provoking premise in a new high-definition video released as part of the celebration of the International Year of Chemistry. [A Day Without Chemistry](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966934&m=1579266&u=ACS&j=7662573&s=http://www.youtube.com/watch?v=AbfW_CMMe48) follows a person who sees more and more everyday necessities and conveniences disappear before his widening eyes.[The Chemistry of Sourdough Bread](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966935&m=1579266&u=ACS&j=7662573&s=http://www.bytesizescience.com/index.cfm/2010/9/27/Chemistry-of-Sourdough)[The Chemistry of Fireworks](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966936&m=1579266&u=ACS&j=7662573&s=http://www.bytesizescience.com/index.cfm/2010/6/25/Bytesize-Science-Presents-The-Chemistry-of-Fireworks)[The Chemistry of Grilling and Barbecuing](http://www.mmsend88.com/link.cfm?r=800557068&sid=15966937&m=1579266&u=ACS&j=7662573&s=http://www.bytesizescience.com/index.cfm/2010/6/15/Chemistry-of-Barbeque) [To Top](#top)  http://images.magnetmail.net/images/clients/ACS/goldline.gif**ACS Podcasts**

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