



Newsletter

SVTC Report Warns of Nanotech Dangers

“The current landscape with respect to environmental knowledge about nanotechnology is eerily similar to the landscape of the 60s for basic chemicals. Regulation is not up to snuff, we lack monitoring and detection technology, and cleanup practices have not been established.”

This warning comes from a new report soon to be released by the Silicon Valley Toxics Coalition. The report, titled *Potential Community Impacts of Nanotechnology*, draws striking parallels between the famous Silicon Valley-based electronics boom and today’s burgeoning nanotech industry.

Toxic spills discovered in the early 1980s at IBM and Fairchild manufacturing plants are blamed for 13 deaths and hundreds of serious medical problems, including birth defects, cancer, and blood diseases. Silicon Valley is still home to 29 Superfund sites and 179 contaminated groundwater locations that are the legacy of the industry’s infancy.

This new report provides a case study of how the lack of manufacturing and regulatory standards led to that contamination. It warns that a similar lack of information and standards regarding nanoscale materials again puts public and environmental health at serious risk.

Although “nanotech” is one of the latest high-tech buzzwords, it’s not all that new. As early as 1959, Nobel Prize-winning physicist Richard Feynman challenged scientists to explore the vastly different properties that many materials exhibit at the atomic scale. Now, materials and processes

NANOMEDICINES are being developed that can, for example, cross the blood-brain barrier or enter the fetal bloodstream through the mother. Such nanomaterials might also be able to cross cellular barriers with unintended and undesirable results.

that take advantage of nanoscale properties are transforming fields as diverse as medicine, electronics, and environmental monitoring.

Due to the very nature of nanotech, it is difficult to predict or evaluate materials based on properties of the bulk forms of similar materials: Therefore current regulatory measures cannot be applied effectively. The report identifies several general danger areas for nanomaterials:

- **Inhalation hazards:** Similarly small particles, notably asbestos, are known to pose serious health risks.

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SVTC Newsletter is published semi-annually by the Silicon Valley Toxics Coalition (SVTC).

Silicon Valley Toxics Coalition is a diverse organization engaged in research, advocacy and grassroots organizing to promote human health and environmental justice in response to the rapid growth of the high-tech industry.

Silicon Valley Toxics Coalition envisions a toxic-free future where each new generation of technical improvements in electronic products includes parallel and proportional advances in social and environmental justice. Our goal is environmental sustainability and clean production for the high-tech industry and improved health and democratic decision-making for communities and workers most affected by the high-tech revolution.

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- Design: Design Action Collective
- Editor: Michael Robin
- Writers/Copy Editors: Vicki Bolam and Corinna Dixon
- Printer: Inkworks

FROM SVTC'S EXECUTIVE DIRECTOR—

Emerging Technologies, Emerging Dangers

In the early 1980s, San Jose residents were shocked by the discovery that toxic chemicals from supposedly “clean” manufacturing plants had polluted nearby groundwater, causing death and illness in people living near high-tech facilities.

Now, more than 25 years later, government and industry are rushing blindly to adopt new technologies that once again have the potential to cause enormous environmental and health damage. The “cleantech” and “nanotech” revolutions are definitely in full swing—but very little is known about the potential health and safety impacts of these materials and processes. And we know even less about hazards that could emerge throughout the products’ lifecycles.

The cleantech revolution promises enormous environmental benefits. Geared to combat global warming by reducing energy use, these products include exciting solar energy technologies that employ new nanomaterials and processes (see the article in this newsletter). Unfortunately, they are being produced and put on the market without adequate health or environmental testing. Although the National Nanotech Initiative is heavily subsidizing nanotech-related products, it is not providing the funds needed to understand and evaluate potential risks.

In one example, nanosensors are being developed that can be sprayed on the sides of buildings to collect solar energy. The benefits are obvious—but no one is investigating what these materials might do as they begin to wear off or degrade. Also being developed are extremely thin flexible solar panels, but no data is available on what will happen when they reach the end of their lifecycle; will solar panels become the next flood of toxic e-waste?

SVTC supports for the application of what’s know as the precautionary principle in evaluating new processes and materials. In other words, we need to restrict the use of new chemicals until they are proven safe. This is the regulatory approach taken in the European Union; although current U.S. policies allow new chemicals to be used until they are shown to cause health or environmental damage. In our view, this is much too late to take action.

These emerging technologies raise the same community “right to know” issues that sparked the formation of SVTC in the early 1980s. Communities near facilities that use nanomaterials are on the frontline of exposure to potentially harmful nanoparticles. Vulnerable communities have the right to know what they are being exposed to and demand that corporations take responsibility for potential harm they may cause to workers, to communities and the environment.

Applying the lessons we learned from the first high-tech revolution, SVTC is working toward solutions at the community, industry, and policy levels. In collaboration with a wide range of research and advocacy partners, we are working toward a modern regulatory framework (within the context of state and national chemical policy) to address these new technologies. At the same time, we are supporting communities as they collect data and monitor health and environmental impacts.

This work will be a major focus for SVTC over the coming year, and we invite your support as we tackle this complex and critical issue.

Sheila Davis

Recognizing SVTC's Supporters!

As we mark Silicon Valley Toxics Coalition's 25th anniversary year, we want to sincerely thank the individuals, foundations, corporations, and organizations listed here that have supported SVTC over the past eighteen months. Your generous contributions have been essential as SVTC works to build a more responsible and sustainable high-tech industry.

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We look forward to your continued partnership as we embark on our next 25 years of environmental activism. With your help, we will continue to promote environmental sustainability, clean production, and safe working conditions throughout the global electronics industry for generations to come!

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GOT A MATCH? EMPLOYER MATCHING CAN DOUBLE (OR MORE!) YOUR GIFT

You may be able to contribute more to SVTC than you think! Many employers match employee charitable contributions, doubling or even tripling your gift. Ask your employer's personnel office for a matching gift form to get started. Companies that currently match employee contributions to SVTC include:

- eBay, Inc.
- Hewlett-Packard Corp.
- Microsoft, Inc.
- New United Motors Manufacturing, Inc. (NUMMI)
- Tyco International, Ltd.

In recent years, employee and employer matching gifts have helped Silicon Valley Toxics Coalition to:

- Push health care organizations and the University of California to adopt sustainable electronics purchasing guidelines.
- Convince Apple to pledge the elimination of all brominated flame retardants (BFRs) and PVC in their products by 2008, ahead of Dell and Hewlett-Packard.
- Publish *Toxic Sweatshops*, an investigative report that examined the environmental and health impact of e-waste recycling programs in U.S. federal prisons.

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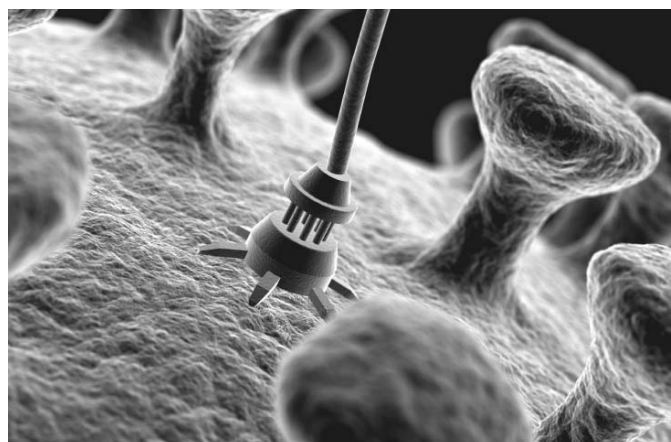
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SVTC REPORT WARNS OF NANOTECH DANGERS *(continued from page 1)*

- **Increased reactivity:** Many nanomaterials are engineered with a high ratio of surface area to volume, thereby maximizing reactivity with other chemicals. These properties can also facilitate other, unplanned types of reactivity.
- **Nanomedicines** are being developed that can, for example, cross the blood-brain barrier or enter the fetal bloodstream through the mother. Such nanomaterials might also be able to cross cellular barriers with unintended and undesirable results.
- **Nanotoxicity:** Similar nanoparticles of different sizes may have different properties; and nanotoxicity can vary with the purity of the material in question.

This new SVTC report urges us to learn from the past, calling for a coordinated industry-wide approach to the development of information and regulatory standards. It also sets forth a list of questions that communities need to ask of companies planning to establish nanotech facilities nearby.

For more on these issues and how you and your community can become more informed and proactive about nanotechnology, we encourage you to review this important report. Watch for the report on the SVTC website, www.svtc.org.



Tour of Reality in Tijuana

Corinna Dixon, Operations Manager



Not far from the swaying palm trees and white sand beaches of San Diego lies the booming border city of Tijuana. Here the pattern of environmental abuse against low-income communities (which SVTC has long observed in our own Silicon Valley) is obvious to those who look beyond the tourist centers and new ridge-top housing developments. Low-paid industrial workers and their families—many of them new immigrants from other parts of Mexico—often have no choice but to live in substandard communities where schools, housing, and parks are literally adjacent to toxic sites.

This past July, SVTC staff participated in Tour Calafiero, organized by the San Diego-based **Environmental Health Coalition's Border Environmental Justice Campaign** and their Tijuana affiliate, the **Colectivo Chilpancingo Pro Justicia Ambiental**. It was an eye-opening experience to meet activists engaged in defending labor rights, public health, and the environment in the San Diego-Tijuana border region and to learn first-hand about the social and environmental justice issues they face.

In Tijuana we toured the **Mesa de Otay Industrial Park** where *maquiladoras* are concentrated. A maquiladora is a factory (typically 100 percent foreign-owned) that imports materials and equipment on a duty-free and tariff-free basis for assembly or manufacturing, and then re-exports the finished product. In Tijuana, maquiladoras encompass a variety of industries including electronics, transportation, textiles, and machinery.

The trip included a visit to **Metales y Derivados**, an abandoned maquiladora that is infamous for the almost 24,000 tons of mixed hazardous waste (including 7,000 metric tons of lead slag, traces of sulfuric acid residue, and heavy metals such as cadmium and phosphorus) that were left behind when a San Diego-based battery recycling operation abandoned the site in 1994. The nearby Río Alamar is heavily contaminated with run-off from the toxic site and with other biological and industrial waste. The neighboring



When it rains, hazardous waste from this abandoned battery recycling facility is washed downhill into the school and streets of the nearby worker settlement.

worker settlement of Colonia Chilpancingo, home to more than 10,000 people, has struggled for more than a decade to get the U.S. and Mexican governments to acknowledge the toxic issue and take responsibility for cleanup.

This October, the Environmental Health Coalition announced the start of the final phase of cleanup to remove 15,400 cubic meters of above-ground contaminants at the site. This remediation project is expected to take two to three months and is financed by the Mexican government. “A final remediation plan represents a historic moment for my community, the environment, our cross-border region, and Mexico,” said Lourdes Lujan, a colectivo member and long-time resident of Colonia Chilpancingo.

Low-income communities should not have to suffer the greatest burden of industrialization—fearing for their health in their own communities.

For more information about the Environmental Health Coalition and their Tour Calafiero visit www.environmentalhealth.org. There you can also order a copy of *Maquilapolis (City of Factories)*, the award-winning documentary film about women maquiladora workers in Tijuana.

Stay Tuned—For a New Wave of E-Waste

Lauren Ornelas, Campaign Director

The sheer volume of electronic devices manufactured globally is staggering, and the flood of toxic e-waste produced as these products are discarded is a major international health and environmental problem.

That tidal wave of dangerous e-waste is about to get a lot worse, with the upcoming Federal Communication Commission (FCC) mandated switchover from analog to digital TV signals, scheduled for February 19, 2009. Consumer's Union estimates that approximately 80 million obsolete televisions could enter the waste stream as a result of the switch. Some estimate that between the end of 2008 and the beginning of 2009 one in four households will recycle at least one television—that's approximately 25 million TVs.

The vast majority of the electronics discarded in this country ends up being dismantled either by people in U.S. prisons or in countries that lack the infrastructure to safely manage the waste, such as China, India and Nigeria. Just as toxic materials pose a danger to the workers who manufac-

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Take Responsibility for
the Global E-waste Crisis!**

ture electronics (and their communities), recycling workers face health risks from literally thousands of hazardous chemicals.

The FCC switch to digital TV was heavily influenced by the television industry, which will reap a significant financial benefit from this change. Here at SVTC, we feel strongly that the corporations who benefit from the digital conversion should also bear some of the responsibility. We ask that they not only take their products back, but also ensure that they are recycled safely, and reduce the amount of toxic chemicals they contain.

To find out more about your television and if you can use a converter box that allows an analog TV to work with the new digital signal, contact the FCC at 1.888.225.5322 or www.dtv.gov.

SILICON VALLEY TOXICS COALITION NEWSLETTER

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