

Peter Eckes – President, BASF Bioscience, and North American Research Chief
Remarks: BASF 150 Creator Space Event
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It's a pleasure to be here in New York this morning to join in BASF's 150 anniversary celebration and to tell you a little bit about the discipline of chemistry research and its role and importance at BASF.

As Wayne mentioned, BASF has been *creating chemistry* for 150 years – we have endured as a sustainable enterprise for a century and a half by generating value from scientific research and discovery.

And while that basic formula has remained the same, the approach has evolved.

Up through the 1970s, the emphasis was on developing new molecules because these innovations generated the greatest value.

From the 1980s up to the end of the century, the focus increasingly moved to improving applications and adapting products.

Today, the focus of innovation and value creation is increasingly moving to functionalized materials and solutions.

By adding molecules or nanoparticles to the surface chemistry of a material, you can assign it new functions, features or properties – things like waterproofing, anti-bacterial properties, magnetism, different colors – the possibilities are as endless as chemistry itself.

Today, we see chemistry as a valuable enabler of sustainability – what do I mean?

As Wayne mentioned, 9 billion people by 2050; nearly 3 Earths-worth of resources required.

How will we do it? Chemistry has answers.

Innovations like **Greensense Concrete** technology which incorporates recycled materials, requires less energy and water to produce and use and outperforms conventional concrete in strength and durability.

If you've admired One World Trade Center, you've seen this sustainability-enabling building material in action.

Or **Ecovio**, a fully compostable bio-based polymer developed by BASF that retains the properties of conventional plastics.

What if that spent plastic capsule from your coffee maker could be composted and used to fertilize your garden or a farm?

We are partnering with the Seattle Mariners and the New York Yankees to reduce the non-compostable waste in their stadiums by using cups made out of Ecovio.

BASF's **4-way conversion catalyst**, which can remove PM (Particulate Matter), as well as CO (Carbon Monoxide), HC (Hydrocarbons) and NOx (Nitrogen Oxides) from gasoline-engine exhaust, helping automakers meet strict new emissions regulations including Euro 6.

On the energy side, we continue to be a major innovator in the **OLED** (Organic Light Emitting Diode) market, technology which could provide far greater versatility and efficiency to urban lighting applications.

Also relevant to urban living, one of our newest innovations is a refrigerator that cools without a compressor – a magneto-caloric appliance up to 35% more efficient than conventional refrigeration.

We unveiled this collaboration with our partners Haier, Astronautic Corporation of America and Delft University of Technology in the Netherlands, at the International Electronics Show in Las Vegas earlier this year.

BASF's claim to the title of "world's leading chemical company" goes well beyond merely sales figures – we are in fact, one of the most innovative and prolific companies in the world.

BASF is the chemical industry's global innovation leader

This is not an opinion -- one need only look at the number and value of our patents.

On average, we file around 1,200 new patents every year – we filed more than 1,500 in 2014; the most in the industry.

This ranks us among the top ten most innovative companies in the world according to the European Patent Office.

In 2014, for the sixth time in succession, we led the rankings in the Patent Asset Index – a formula-driven value comparison of patent portfolios industry-wide.

Our research pipeline includes approximately 3,000 ongoing projects.

We currently have more than 10,700 employees working in research worldwide.

Our spending on research and development continues to grow – totaling about 1.9 billion Euros (more than 2 billion USD) in 2014 – BASF's largest ever research spend.

We want to apply our vast R&D capabilities to humankind's biggest challenges of today and tomorrow.

An increasing proportion of this intensive innovation activity is happening right here in North America.

Why? North America, and specifically the US, continues to be a world-leading hotbed of innovation, entrepreneurialism and scientific discovery:

9 of the world's 10 most active cities for start-ups are in the US.

8 of the 10 top-ranked "World Universities" are in the US.

The region draws top scientists and engineers from all over the world – its pool of science and research talent is deep.

According to [R&D Magazine](#), in 2013, the U.S. invested \$424 B in research and development (R&D), while the next closest nation, China, invested roughly half that amount (\$220 B).

Looking to the future, BASF is strengthening its research presence close to our important North American customers -- we want to have the ability to work with our customers at a very early stage in the innovation process.

With this in mind, by 2020, 25 percent of BASF's research activities will be conducted here in North America.

We currently operate 27 R&D sites and seven main research hubs here in North America, where we have approximately 1,850 employees dedicated to research.

This year, BASF's first-ever North American-headquartered global research platform was established – the Biosciences research platform; which I am proud to lead as President.

We are doing some exciting work in biotechnology – for agriculture, certainly, but also for a wide variety of industrial applications.

This is called "white" biotechnology, as compared to "Green" or plant biotechnology, which is my field of expertise.

While Green biotech can produce crops and plants that are inherently resistant to drought, pests and disease.

White biotech is about harnessing natural synthesis to produce useful chemicals ranging from vitamin B2 for animal nutrition to succinic acid for bioplastics.

To expand BASF's capabilities in this area, at the end of 2013, the company acquired San Diego-based Verenum Corporation, a pioneer in the development and commercialization of high-performance enzymes, bringing a wealth of research talent, technology and processes to BASF.

The acquisition also added some highly innovative and sustainable products to the BASF portfolio and gave us a heightened presence within the West Coast research community.

Speaking of the West Coast research community, last year BASF inaugurated the California Research Alliance with UC Berkeley, UCLA and Stanford.

This is a multi-disciplinary research institute with an emphasis on biosciences and new inorganic materials for energy, electronics and renewables.

It's a collaborative model similar to one we began on the East Coast with Harvard back in 2007 -- the BASF Advanced Research Initiative.

In 2013 BASF and Harvard teamed with MIT and UMASS, Amherst to establish the North American Center for Research on Advanced Materials.

These cooperative arrangements are part of BASF's global Know-how Verbund – a network consisting of BASF's research team of 10,700 and innovators at 600 top universities, institutions and companies throughout the world.

Collaboration and open-innovation – these are the foundation of BASF's forward-looking innovation approach.

We have seen time and time again how a cooperative approach can lead to something truly remarkable.

Co-creation is an important element of the evolving innovation landscape.

Here's an example.

[Shows the adidas Boost shoes he is wearing]

These are adidas' Boost running shoes, powered by Infinergy -- BASF's new super-elastic foam technology.

Working together with adidas' innovation team, BASF developed an expanded thermoplastic polyurethane foam ideally suited for running shoe mid-soles.

We basically found a way to blow up polyurethane like popcorn, creating material that stretches like rubber, but is remarkably light and resilient.

No one is saying that great running shoes will save the world, but they are part of the improved quality of life that is key a part of sustainability.

When people of vision and commitment work together, the results can be spectacular.

That's what co-creation is all about – and on Saturday BASF and adidas will host a public “jam session” that will allow a group of New Yorkers -- experts and ordinary free-thinking citizens -- to pool their ideas and creativity to address the future of mobility and movement.

Through Creator Space, here in New York and around the world, we celebrate 150 years of creating chemistry.

We want to build and share that know-how and expertise.

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Only by focusing the entire spectrum of science and industry on the challenges of today and tomorrow can we solve them.

Today we are here with you in New York City to discuss the challenges of sustainable Urban Living – issues for which many of you share a common passion and considerable expertise.

How can we design cities, how can we plan them, how can we build and govern them in such a way that quality of life is improved and precious resources are conserved?

These questions are critical and arriving at the answers will require a diversity of perspectives.

We are honored and eager to be part of the conversation.

We look forward to your input and insight as we discuss these important Urban Living issues that are particularly pertinent to New Yorkers but have applicability throughout the world.

While you are here, we encourage you to use the time to your best advantage, network with each other, share ideas and create connections that will lead to collaborative solutions to these pressing issues.

We greatly appreciate your participation in our NYC Creator Space on Urban Living

Thank you for your time, attention, energy and enthusiasm as we endeavor to create chemistry for a sustainable future – together.

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Addendum: More Innovations

With our Creator Space initiative – both the on-line collaboration community and the Tour that's stopped in New York this week – we want to focus co-creation's energy on three of the world's most pressing challenges: Sustainable Food Chain; Smart Energy and Urban Living.

We are enlisting and collaborating with experts like you at events throughout the world on each of the three challenges.

It's our hope that with the benefit of your insight, we can develop the necessary sustainability-enabling solutions.

BASF has innovations – both on the market and in the research pipeline – in each of these areas.

In the sustainable food chain area, we have innovations like drought-tolerant corn developed through biotechnology; and Xemium long-lasting anti-fungal for crop protection. Our portfolio also extends to applications and packaging solutions that reduce food spoilage.

Our Smart Energy portfolio includes materials for wind turbines, including:

Baxxodur epoxy systems to shorten blade manufacturing time; lubricating oils for gears, and Kerdyn structural foam for light, strong blade cores.

We are developing cathode materials for the more energy-dense batteries of the future and were pioneers in the production of Organic LEDs for more efficient lighting applications.

And related to urban living, the topic on the agenda here at the Creator Space New York, BASF offers a full line of sustainability-enabling building materials, well beyond the GREEN SENSE concrete technology I mentioned earlier:

- Insulation materials like BASOTECT melamine foam for sound dampening and SLENTITE™ – High-performance insulation with organic aerogel for heat containment;
- Solutions for storm-water management, such as ELASTOPAVE pervious pavement; made from stone and recycled glass.
- Flexible white reflective roof coatings like ACRONAL acrylic dispersions that help mitigate urban heat island effect and reduce heating and cooling costs.