

Merck KGaA  
Darmstadt, Germany

# TOGETHER!

Corporate Responsibility 2017



# we take on responsibility

This is something we've been doing for 350 years. Responsible conduct means looking, listening and doing better. Listening is especially important to us because we want to know what matters to our employees, customers, investors, and other stakeholders. There is no better way to protect their interests, meet their needs – and secure our company's long-term success. In fact, we've made this aspiration an integral pillar of our corporate strategy. Our corporate responsibility strategy builds on this approach, leading us to practice responsible governance each and every day. In our CR efforts, we focus our resources on those areas where we can make the biggest difference, which is why we pursue three strategic spheres of activity: health, environment, and education & culture. In doing so, we constantly seek to secure the future of society while honing our competitive edge.





*"Driven by curiosity, we have been contributing to the advance of science for 350 years. To do so, we engage all our stakeholders in an open, constructive dialogue because only together can we find answers to the great challenges of our time."*

**Stefan Oschmann**, Chairman of the Executive Board and CEO

# 350 years in pursuit of curiosity

We live in a world full of opportunities. A world in constant flux with the churn of new ideas. This evolution spurs us to new heights. We look closer and discover solutions as a foundation for our ground-breaking products and technologies. For 350 years, we've been offering high-quality products for life in all its diversity.

Founded in Darmstadt in 1668 by Friedrich Jacob Merck, we are the world's oldest pharmaceutical and chemical company. 2018 is our big jubilee: 350 years in pursuit of curiosity – the engine that drives progress, the passion that binds us.

Within this time, we have grown into a science and technology company that spans the globe. Our more than 52,000 employees across 66 countries are working on new ideas with the potential to change the world. But one thing has always stayed the same: To this day, the founding family is still the majority owner of the company.

We finished 2017 with good results: Sales grew slightly by 2.0% to € 15.3 billion (2016: € 15.0 billion). EBITDA pre, our primary earnings indicator, reached € 4.4 billion, nearly meeting its high 2016 level.

Merck KGaA, Darmstadt, Germany, holds the rights to the name and the trademark "MERCK" internationally, except for the United States and Canada, where we operate in the biopharma market as EMD Serono, in life science as MilliporeSigma, and in the specialty chemicals and high-tech materials business area as EMD Performance Materials.

**Within our Healthcare, Life Science and Performance Materials business sectors, we develop and manufacture specialized, high-quality products.**

#### **Healthcare**

Whether prescription medicines for the treatment of cancer, multiple sclerosis and infertility, or over-the-counter products for a healthy lifestyle, our efforts aim to change the lives of millions of people.

#### **Life Science**

Hand in hand with the global scientific community, we are tackling the greatest challenges faced by this sector. We provide scientists with laboratory materials, technologies and services to make research and biomanufacturing simpler, faster and safer.

#### **Performance Materials**

We develop specialty chemicals for special applications, including liquid crystals, OLED materials for displays and lighting, effect pigments for coatings and cosmetics, and high-tech materials for the electronics industry.

HEA



As Executive Director of the Schistosomiasis Control Initiative, Wendy Harrison supports the health ministries of many African countries in battling this parasitic disease.

# LTH

**“By donating tablets, Merck KGaA, Darmstadt, Germany is making a significant contribution to the fight against schistosomiasis. However, in order to eliminate this disease, companies should also leverage their skills in other areas – for instance in education and infrastructure.”**

Wendy Harrison



# HEA

**“Our tablet donations are an important first step in treating schistosomiasis. However, our ultimate goal is eliminating this dreadful disease. There’s still a long way to go and we must join forces with all our partners to achieve this.”**

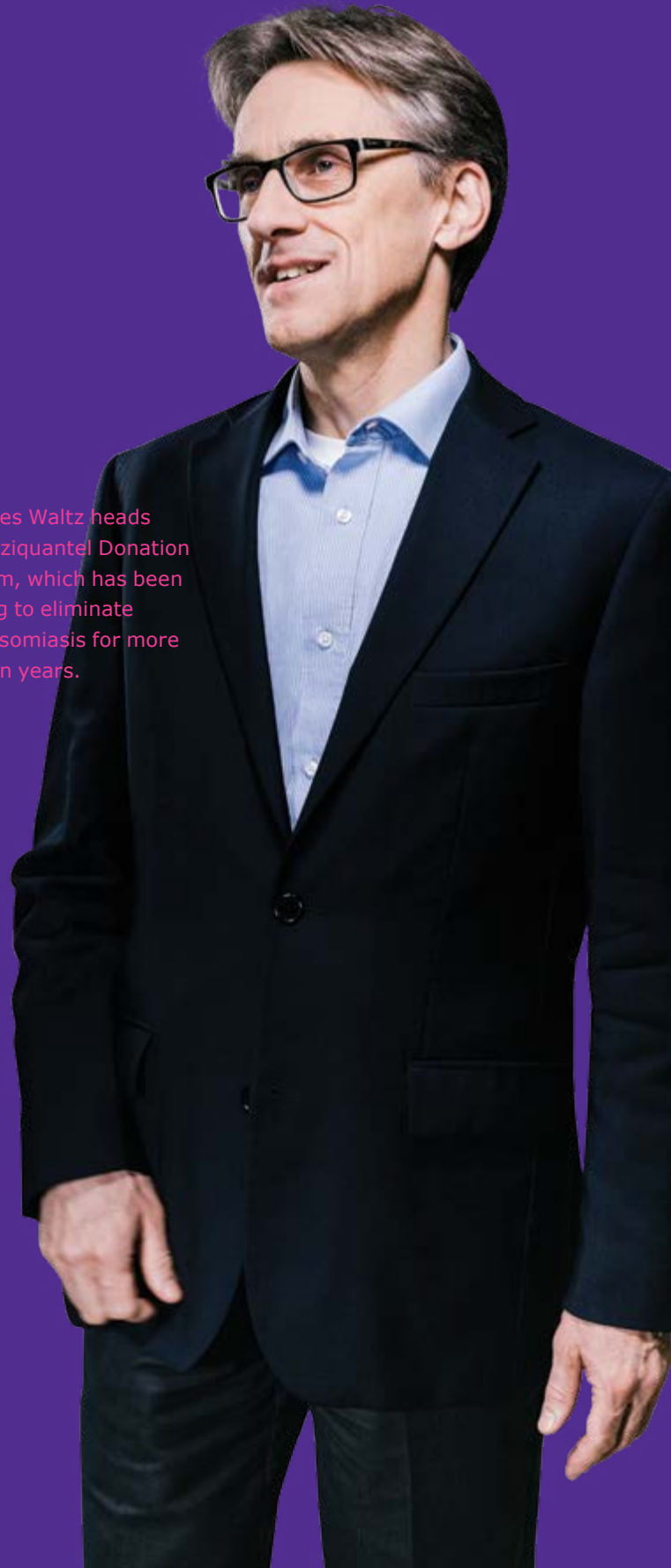
Johannes Waltz





# LTH

Johannes Waltz heads our Praziquantel Donation Program, which has been working to eliminate schistosomiasis for more than ten years.



# IMPROVING care

**W**e are committed to providing people all around the globe with access to adequate healthcare, especially in low and middle-income countries where the necessary infrastructure is often lacking. Recognizing that access is a complex and multifaceted challenge with no one-size-fits-all solution, our programs and initiatives are tailored to global, regional and local needs. We're helping lower barriers to access in multiple ways, including our battle against the parasitic disease schistosomiasis in Africa, measures to detect counterfeit medicines and campaigns to raise awareness.



# Fighting schistosomiasis

Schistosomiasis – a disease as devastating as it is neglected. Worldwide, more than 200 million people suffer from this disease, which claims the lives of over 280,000 people in Africa every year. In an effort to battle schistosomiasis, we developed the active ingredient praziquantel in the 1970s as part of a joint research partnership. This drug is the only active ingredient that can treat all forms of this infection. Since 2007, we've been supporting the World Health Organization (WHO) by donating up to 250 million praziquantel tablets per year depending on need. This has since enabled the treatment of more than 150 million patients, primarily school children. However, in its current formulation, this medication is still not suitable for children under the age of six. Moreover, distribution of the donated tablets across predominately rural regions continues to be difficult, so we're working hand-in-hand with our partners to counter these challenges.

We realize, however, that donating tablets is only the first step to completely eliminating the disease, which is why we're also working to raise awareness in the affected regions and ensure that more is done at the international level. In this vein, at the end of 2014 we launched the Global Schistosomiasis Alliance (GSA) and joined forces with international partners in a bid to address the remaining gaps in the fight against this parasitic infection. In addition to these efforts, the GSA attracted attention at the 2017 Neglected Tropical Diseases Summit in Geneva with its #MakingSchistory campaign.



Disease caused by parasitic worms.



Associated with poverty & inadequate sanitation.



More than 200 million people infected worldwide.



280,000 people die every year.



92% of estimated cases occur in Sub-Saharan Africa.



More than 150 million children treated thanks to our donations.

# Tracking down counterfeits

Can I be certain that my medicine is not counterfeit? The answer to this question is all too often “no”, especially in developing and emerging economies. According to a report published by the World Health Organization (WHO), more than 10% of all medicines in these countries are counterfeit or substandard. We are confronting this issue through the Global Pharma Health Fund (GPHF), a non-profit initiative sponsored by our company. Our weapon in the fight against counterfeit medicines is the Minilab, a portable, compact laboratory that fits into a tropics-resistant suitcase and can detect falsified pharmaceuticals quickly, easily and inexpensively.

The Minilab can now test 90 active ingredients, ranging from antimalarials, antihistamines and analgesics, to antipyretics and antibiotics. Since 1998, the GPHF has supplied a total of 836 Minilabs at cost to nearly 100 countries, particularly in Africa and Asia. The test kits are primarily utilized by local health authorities – for instance in collaboration with labs for governmental drug inspection centers.

# 90

substances: The Minilab is currently equipped to test drugs for 90 active pharmaceutical ingredients, verifying drug identity and content. And this number is constantly on the rise.





## Breaking the stigma

Involuntary childlessness is a fate that severely affects people all over the world. Despite major advances, reproductive medicine is still far from being able to help all who need it. The stigma attached to infertile women is particularly great in many cultures across Africa and other developing countries. Through our “More than a Mother” campaign, we are committed to supporting and empowering women affected by this plight. As part of this campaign, we launched the “Empowering Berna” project in Uganda to help women start their own business and thus achieve financial independence.

The project has since been extended to include many African countries, where it has benefited more than 1,000 women. Also part of the campaign is our Embryology & Fertility Training Program, a three-month hands-on course to establish a platform of fertility specialists across Africa and Asia. Launched in 2015, “More than a Mother” is now a program of the Foundation sponsored by Merck KGaA, Darmstadt, Germany, an organization established in 2017 to drive many of our initiatives and programs in the area of health education.

# ENVIR



As the General Secretary of the European Energy Research Alliance (EERA), Adel El Gammal advises the European Commission on low-carbon energy and technologies.

# ON- MENT

**“It’s important for large companies such as Merck KGaA, Darmstadt, Germany to invest in pioneering technologies, despite the potential risk. High-risk, high-return investment is what can bring truly disruptive technologies.”**

**Adel El Gammal**



# ENVIR



**“We use our strong brand and the trust in our products to propagate forward-looking technologies such as organic photovoltaics. To do so, we are constantly venturing into new territory that must first be sounded out.”**

**David Müller**



# ON- MENT

As Global Head of Marketing Photovoltaics within our company, David Müller seeks to establish a dialogue with all stakeholders in this field.



# Enabling sustainability

**T**hrough our products, we seek to help overcome global ecological challenges such as climate change and resource scarcity, and are thus continuously working to enhance the sustainability footprint of our products. We also want to help our customers achieve their sustainability goals and offer greener products. To this end, we're developing liquid crystal technologies and materials for flexible solar cells, not to mention organic light-emitting diodes (OLEDs) that are becoming more powerful and energy-efficient with each new generation. Backed by these technologies, our customers can thus create more sustainable products. Through our "green" solvents and highly efficient filters, we're moreover enabling them to make their own manufacturing activities more sustainable.

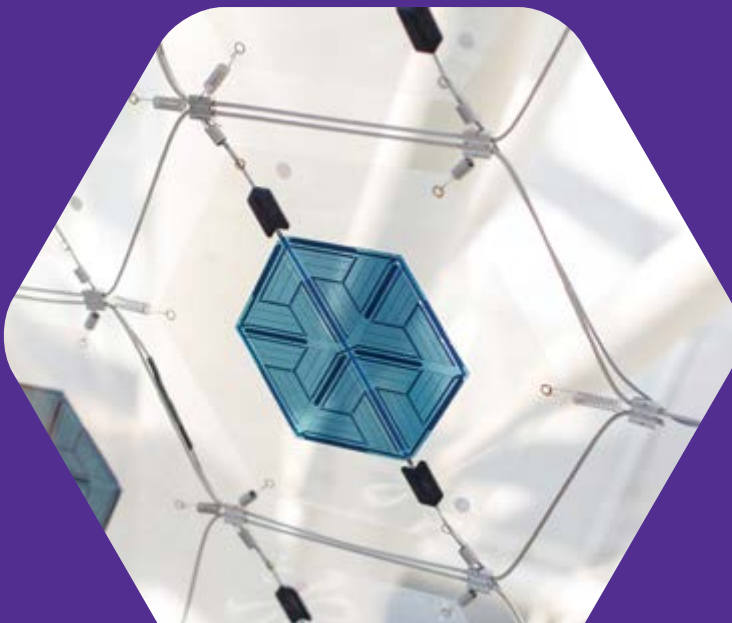




## LUMINOUS leaves

Every child today knows that the black panels on building roofs generate electricity. Yet research in the field of solar technology is far from having run its course. Indeed, organic photovoltaics are opening up entirely new, exciting applications. Take, for instance, flexible, semi-transparent, lightweight solar cells that can be integrated in buildings, applied to flat or curved surfaces

or even used in clothing. To show what this technology is already capable of, we have planted several solar trees in front of our Innovation Center in Darmstadt. The trees are fitted with organic photovoltaics and were produced with printable formulations of modern, high-performance polymers. The energy generated by the sun is stored during the day – while at night the “leaves” create an impressive light show. Solar cells are thus becoming an integral element of modern architecture.



Organic photovoltaics:  
flexible, semi-transparent  
and lightweight.

# smart glass

Windows that darken at the touch of a button – with no need for blinds. Smartphones that combine sky-high resolution with low energy consumption. Although these may sound like science fiction, both are possible today thanks to our liquid crystal technology. And the advantages are plain to see. Take, for instance, windows with our liquid crystals. Comprising a pane of glass that can be darkened seamlessly, they block sunlight and thereby regulate the resulting heat. Liquid crystal window technology can thus significantly cut energy use in climate-controlled buildings. Available in a variety of colors, they moreover offer designers and architects a whole new range of design possibilities. In addition to buildings, this technology could soon feature in cars and ships. Goodbye blinds and awnings, hello future!

# 40%

Liquid crystal windows can cut energy use in climate-controlled buildings by up to 40%.



Looking through the liquid crystal windows in chessboard mode.



Our EZ-Fit Manifold™ filtration system is 99% recyclable.

## All-round sustainability

Fewer resources, less water, less energy – these are just some of the goals we've set for developing life science products that are more sustainable. For instance, we have created a laboratory filter that uses 47% less raw material than its predecessor. We achieved this milestone thanks to our Design for Sustainability (DfS) program, which enables sustainability right from the start. Under this approach, our product developers assess how well a new concept performs in terms of specific sustainability factors such as material, packaging and amount of waste produced. This system allows us to figure out where there is room for improvement before the product is launched.

In terms of our chemical products, too, we are committed to boosting our efforts to develop greener alternatives to conventional products, an approach shaped by the 12 Principles of Green Chemistry created by Paul T. Anastas and John C. Warner. A prime example is our green solvent Cyrene™, which was honored with the 2017 European Bio-Based Chemical Innovation of the Year Award. Bioderived from waste cellulose, this solvent is used as an alternative to traditional solvents such as dimethylformamide.

# EDUCA CULT



Amitabh Banerji is a Junior Professor of Chemistry and Chemistry Education at the University of Cologne, where his main research interests include innovative approaches to teaching chemistry.

# TION & URE

**“When providing support to schools abroad, you should know your target group well. We need to develop programs that are tailored to the local educational level and address current topics relevant to everyday life.”**

**Amitabh Banerji**



# EDUCA CULT



**“You can't simply export a concept wholesale that works in Germany such as the OLED suitcase. This is why we provide scientific guidance for our projects and are expanding our international school partnerships one step at a time.”**

**Christa Jansen**



# TION & URE

Christa Jansen is head of School Partnerships within our company and is working to open up the world of science to children and adolescents.



# Awakening curiosity

**W**e have a long tradition of promoting culture and education. We give wing to creativity, passion for discovery and curiosity while also empowering people with the courage to exceed the limits – all characteristics that are indispensable to us as a high-tech company. To inspire a love of science in the next generation of researchers, we have set up research labs for children and adolescents. We also provide schools with materials for exciting lessons and offer continuing education to teachers. Beyond education, we also promote cultural initiatives – because music and literature inspire people. For instance, we sponsor five literature prizes worldwide, such as the Premio Letterario in Italy. For 15 years, we have been presenting this award in recognition of authors who open up the world of science to a broad audience.



90

teachers, university lecturers and professors in India have been trained.



## knowledge on wheels

Have you ever heard of organic electronics (OE)? In this hot field of research, our scientists are working on manufacturing innovative, sustainable products such as semi-transparent, flexible solar cells and ultra-efficient organic light-emitting diodes (OLEDs) for displays and lighting. But OE is not merely a field of research – it's also an extremely interesting topic for science classes. With our support, the Universities of Cologne and Wuppertal have developed a suitcase of materials that young people can use to build their own OLEDs. Many German schools have been using this kit since 2016. At the end of 2017, we took ten of these suitcases on a journey to India.

Moreover, we joined forces with the University of Cologne to develop an accompanying capacity advancement concept. As part of this program, 11 student teachers accompanied their professor on a trip to Mumbai to train more than 50 educators on using the suitcase. During the workshops there, teachers grew excited when the diodes began to light up. They can now share this excitement within their schools thanks to the ten kits that have been entrusted to the local university with maintenance and upkeep as part of the package. Any time they wish, teachers can borrow these suitcases for use in their lessons at no cost. The project continues to be under scientific supervision.

# creating sparks

Abstract concepts, complicated formulas and boredom – this is unfortunately how many people recall their chemistry, biology and physics classes. That's no way to inspire a passion for a future of possibility. Luckily, it doesn't have to be that way anymore. As part of SPARK, our global volunteer program, employees from our Life Science business sector share their skills and experience with students. Under this initiative, in 2017 we launched the Curiosity Cube™ as a retrofitted shipping container that has been transformed into a solar-powered mobile science lab.

Traveling more than 29,000 kilometers throughout the United States, it stopped at schools and city centers in over 85 communities. More than 38,000 students visited the mobile lab, and each one of the nearly 23,000 experiments was led by one of our employees. In 2017, more than 2,500 employees across the globe volunteered over 13,700 hours to support SPARK. Boredom? That's so yesterday!

## 38,000

In 2017, more than 38,000 students visited our Curiosity Cube™.



21,000

people attended concerts performed by the Deutsche Philharmonie sponsored by Merck KGaA, Darmstadt, Germany in 2017.



## Fighting Cancer with Music

What began in 1966 as a company ensemble is now a professional symphony orchestra. The Deutsche Philharmonie sponsored by Merck KGaA, Darmstadt, Germany is an integral part of cultural life in Darmstadt and beyond. In 2017 alone, approximately 21,000 people attended their concerts.

The orchestra regularly goes on international concert tours. In November 2017, for instance, one of these tours took the musicians to Morocco, where they gave a benefit concert in Marrakesh in honor of National Cancer Day. Emceed by Princess Lalla Salma of Morocco, the event recognized leading oncologists for their efforts in the battle against cancer.

# OUR Foundation

Established in 2017, the Foundation sponsored by Merck KGaA, Darmstadt, Germany is committed to improving the health and wellbeing of people around the world – especially in developing and underserved regions. The only foundation of Merck KGaA, Darmstadt, Germany, it consolidates many of our health education initiatives under one roof, improving access to health solutions, building scientific research and healthcare capacity, and empowering people in STEM fields with a special focus on women and youth.

Take for instance our Cancer Access Program, which has set itself the task of building cancer care capacity in an effort to increase the limited number of oncologists across Africa. Under this initiative, the Foundation sponsored by Merck KGaA, Darmstadt, Germany is partnering with academia and health ministries across the continent to provide one and two-year oncology fellowships. More than 30

healthcare providers from over 15 African countries have enrolled in this program since 2017. In their home countries, which include Chad, Kenya, Liberia, Mauritius, and Zambia, they can now improve access to high-quality, equitable cancer care.

Also part of the program, our “More than a Patient” initiative supports women cancer survivors in Africa. By providing training and a wide range of resources, we are helping them to establish their own small business so that they can live an independent life. To achieve these ends, we partner closely with patient advocacy groups and other institutions in Africa.

## OUR VISION

**A world where  
everyone can  
lead a healthy  
and fulfilling  
life**



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