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Welcome to City of Science Darmstadt!

The City of Science Darmstadt is a city of many stories. Here are a couple of them.

We have Friedrich Jacob Merck, who bought a local pharmacy in 1668 that would lead to a family business that is known today as Merck KGaA, the world’s oldest operating chemical and pharmaceutical company in the world.

We also have Justus von Liebig who became known as “the father of the fertilizer industry” in addition was working with a manufacturing process for beef extracts that led to what has become known as bouillon cubes.

The City of Science Darmstadt offers its residents, businesses, and visitors something special. We hope that you’ll look through this brochure and discover some of the many things Darmstadt has to offer, but to really know City of Science Darmstadt, you can only do this by paying us a visit.
Darmstadt - “City of Science”

In 1997, Darmstadt was granted the honorary title “City of Science” by the Hesse state government. This honor was given the “City of Science Darmstadt” in recognition of the city’s chosen identity, while acknowledging a rich history in scientific and technological, global success. It also confirmed, what people in the City of Science Darmstadt have known for a long time already: The City of Science Darmstadt provides outstanding opportunities for research and development on national and international scales.

This title is earned through a significant history and tradition of innovation and is home to no less than 30 major research institutions of which three of them are Fraunhofer Institutions.

Major Research facilities
CASED Center for advanced security Research Darmstadt
www.cased.de
German Institute for Research about Poland
www.deutsches-polen-institut.de
EUMETSAT – European Organisation for Meteorological Satellites
www.eumetsat.int
ESOC Europen Space Operation Centre
www.esa.int
Protestant University of Applied Science Darmstadt - EHD
www.eh-darmstadt.de
h_da – University of Applied Sciences Darmstadt
www.h-da.de
Fraunhofer LBF – Institute for Structural Strenght
www.lbf.fraunhofer.de
Fraunhofer IGD – Institute for Computer Graphics
www.igd.fhg.de
Fraunhofer SIT – Institute for Secure Information Technology
www.sit.fraunhofer.de
Forschungsring für Biologisch-Dynamische Wirtschaftsweise e.V.
www.forschungsring.de
GSi Helmholtz Centre for Heavy Ion Research
www.gsi.de
House of IT e.V.
www.house-of-it.eu
Institute for Art and Culture Mathildenhöhe
www.mathildenhoehe.info
IWU – Institute for Research on Housing and Environment
www.iwu.de
NATURpur Institute for Climate and environmental protection
www.naturpur-institut.de
Jazz-Institut Darmstadt
www.jazzinstitut.de
JKI - Julius Kühn Institut
www.jki.bund.de
Öko-Institut e.V. – Institute for Applied Ecology
www.oeko.de
TU Darmstadt – Technical University
www.tu-darmstadt.de
VHT – Institute for Timber and Lightweight Construction
www.vht-darmstadt.de

Source: Department of Economy and Urban Development
A History of Innovation
The City of Science Darmstadt is a city of curiosity, where innovation thrives. Here are four inventions that are tied to City of Science Darmstadt.

Plexiglas© came out of work that Röhm GmbH (now part of Evonik Industries) was doing with poly (meth)acrylates.

Röhm GmbH also developed BURNUS©, the first enzyme-based washing detergent, providing a transition from labor-intensive washing boards to modern washing machines.

Wolfgang Hilbert, who studied at TU Darmstadt and later became a professor there, invented the digitally encoded time transmission of radio clocks. You might have a clock or two around your house that synchronize with atomic time at different parts of the world, being highly accurate, while saving you the trouble of having to reset it often.

Friedrich Reinitzer, looking into his microscope at Merck, stumbled upon liquid crystal (LCs) which have resulted in liquid crystal displays (LCDs) being used laptops, televisions, smartphones, and an ever-expanding product usage.

Imagine how City of Science Darmstadt’s history of innovative might transform your business!
Our Colleges and Universities

There are lots of cities around the world with great colleges and universities, but in City of Science Darmstadt our schools have played a key role in helping technology to be discovered, applied, and to thrive by their relationship with the area research institutes and companies in the area. You’ll find a well-educated workforce in Darmstadt, ready to help your company grow and thrive.

The TU Darmstadt

Albert Einstein once recommended the TU Darmstadt saying, “In my opinion you absolutely must go to Darmstadt. There is a good polytechnic there...” Today renowned scientists and the executives of big companies confirm that their studies at TU Darmstadt laid the foundation of their success. TU Darmstadt qualifies students for the best opportunities and positions – as attested over and over by various university rankings in mechanical engineering, computer science, industrial engineering, electrical engineering, the humanities and social sciences. Notable faculty and alumni include two Nobel laureates, the first Kennedy Space Center director, a rocket pioneer, and the first president of Israel.

TU Darmstadt is one of the strongest universities in Germany, and not only in teaching and research. In 1882 the school “invented” electrical engineering by appointing as the world’s first professor in the subject, and at the same time gave itself a new, internationally recognized orientation. Many other new faculties and disciplines followed, from materials science to business computing.

TU Darmstadt strives to find decisive answers to urgent questions about our future – in the fields of energy and mobility, communication and information, building and housing. Part of the university’s success is due to the fact that students and scientists learn and research together.

Photo: Katrin Binner/TU Darmstadt
TU Darmstadt has an outstanding reputation with the automotive industry and its suppliers, with aviation companies, with major players in the chemical industry and mechanical engineering, and among the leading enterprises in information technology. The university receives top international ratings in production engineering, materials science and flow mechanics. The Computational Engineering research area is considered highly innovative; award-winning teams at TU Darmstadt are dedicated to IT security research.

Cooperation with selected partners leads to persuasive results:
TU Darmstadt has held key positions in the European Centre for Aviation Development, based in Darmstadt, and operates joint research laboratories with companies such as Henkel, Merck, and SAP. Part of what makes TU Darmstadt attractive is its cooperation with non-university research facilities – with the Helmholtz Association’s Gesellschaft für Schwerionenforschung, the Fraunhofer Institutes, the German Plastics Institute and the Max Planck Institutes in Mainz and Heidelberg, for example.

**Hochschule Darmstadt - University of Applied Sciences**

Darmstadt University of Applied Sciences (Hochschule Darmstadt, h_da, established in 1971) puts science into action. It is one of the largest and most distinguished universities for applied sciences in Germany. One reason is the concentrated potential of some 10,500 students. The university has an excellent reputation for a realistic, scientifically grounded approach to higher education and the professional success of its graduates. The 2006 “trendence” study for example found h_da’s graduates among the top five German Universities of Applied Sciences. And for years h_da graduates have been among the favourites of German personnel directors, according to surveys by the business magazine Wirtschaftswoche.

Darmstadt University of Applied Sciences owes its success and renown to short, efficiently organized courses of study, a practical orientation in courses of studies, an international outlook, individualized continuing education opportunities, and a results-oriented commitment to research and development. Teaching and research at h_da are concentrated in the following areas of focus: engineering; information technology; social work, social sciences and economics; and architecture and design.

In the Cooperative Courses in Computer Science and Engineering, students are trained both in the academic setting at h_da, and at companies in the surrounding region. Germany’s first distance-learning course in a technical subject is the Master’s degree course in electrical engineering, which addresses the needs of working students with a combination of on-campus and independent study phases. Some Master’s degree courses at h_da are taught in English, in order to meet the demands of the international labour market. Among these are the Global MBA, offered in cooperation with Indian and American universities; the Master of Arts in Media Direction, developed in German-Irish cooperation; the Master of Science in Electrical Engineering and the Joint International Master of Science (JIM) in Computer Science, jointly offered with universities in Australia and the US.

Applied research and development is a key priority at Darmstadt University of Applied Sciences. Research contributes to excellent teaching by constantly delivering new, stimulating topics, and supports the students’ introduction to modern project oriented studies. The University collaborates closely with regional businesses and scientific institutions in technology and design transfer, and in co-operative research projects.

Excellent cooperative projects, the broad spectrum of practical-oriented courses of study, and the success of h_da graduates are living proof of what “putting science into action” means at the Darmstadt University of Applied Sciences.
Protestant University of Applied Sciences Darmstadt - EHD

The Protestant University of Applied Sciences City of Science Darmstadt (Evangelische Hochschule Darmstadt, EHD) makes up the third of the three major universities in City of Science Darmstadt. It strives to improve the quality of life in society and in the service of the Church. Students at EHD are not restricted within the boundaries of their chosen course of study, but also range in interdisciplinary directions. Because of the university’s relationship with many European countries, it offers students the opportunity to spend time abroad during their studies. The courses of study are particularly aimed at combining the basic knowledge and skills of an academic field with issues of social and professional ethics. The scientific investigation of social and individual problems includes a strong practical orientation. Graduates of EHD have a qualified, forward-looking education. This is reflected in the university’s high position in the ranking of comparative institutions.

The Bachelor’s degree course in Social Work examines the situation of target groups within the context of social conditions. A special focus is on the science of social work and its methods in institutional contexts. The degree can be combined with a specialization in the parish welfare work of the Hesse-Nassau Protestant Church. Inclusive Education is also offered as a course of study leading to a Bachelor’s degree. This international course is unique in Europe, and is aimed at responding to differently abled people with appropriate answers – not with labelling or levelling. The goal is to establish conditions for learning and living that integrate rather than isolate people.

The Bachelor’s degree course in Nursing Science imparts new skills and opens up new fields of employment for traditional professional fields. The course, with a generalist orientation, places emphasis on research skills, quality development, health promotion, education and counselling, and reflection on ethical issues.

Despite denominational sponsorship, the EHD welcomes students of all faiths. However, students do need to accept the Church orientation of EHD, respect the beliefs of others, and be willing to participate in the dialogue between theology, the humanities and the social sciences are admitted.
Fraunhofer Society

The Fraunhofer Society (German: Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e. V. – “Fraunhofer Society for the advancement of applied research”, was founded in 1949. They carry out application-oriented research for industry and to the advantage of society. Their research results are generally released to the market within five to ten years. Contractual partners and clients are the industry and service businesses as well as public authorities. It is a research organization with 67 institutes spread throughout Germany, each focusing on different fields of applied science. City of Science Darmstadt is in the unique position of being home to three of them.

Fraunhofer Institute SIT

Every day we hear of IT security related threats attacking our businesses and threatening our “confidential” data. Because more and more technical products depend on computer technology, IT security will in the future be even more important for the individual user, for companies, and for society as a whole.

Software bugs, system failures, computer viruses, or intentional hacker attacks can disrupt entire business units or operations of companies, endanger the success of enterprises, and inflict severe financial damage on individuals. To prevent such harm, and to ensure that the advantages of information technology can be utilized safely in the long term, the Fraunhofer-Institute for Secure Information Technology (SIT) develops innovative ways to protect devices, services and applications.

As a service provider, the Institute designs solutions that directly address the client’s needs and can be deployed immediately. Such custom-tailored services are made possible by a staff of some highly qualified employees who deal with all areas of IT security. They are the broad base of expertise on which SIT
builds top-flight, integrative technological services. As a specialist for IT security, the Institute deals with all the relevant technologies and issues. These include classical IT security fields such as biometrics, encryption, digital watermarks, Internet security and electronic identification, as well as new security issues involved in the use of RFID, Voice-over-IP, software-oriented architectures, web services, IT-based building management and geodata systems.

Fraunhofer SIT, established in 1961, has been a pioneer of IT security from its inception, and is one the leading research facilities in the world today. Thanks to its broad base of expertise, combining a wealth of practical experience with deep theoretical knowledge, the Institute is able to manage, integrate, evaluate and test security techniques proficiently. At the same time, the Institute’s neutrality means that clients can depend on absolute objectivity, and hence the best solution for any situation. Together with the TU Darmstadt, the Darmstadt Centre for IT Security, the CAST Forum and its member companies, and numerous IT security service providers in the Rhine-Main-Neckar region, the Institute is making City of Science Darmstadt a stronghold of applied IT security research in Germany.

Fraunhofer SIT delivers innovative systems, technologies and security tools for companies and organizations of all sizes, in all industries. The Institute offers these organizations a wide range of research and development services, as well as professional project management. Small and medium-sized enterprises in particular benefit from the Institute’s services, which range from application-oriented fundamental research to prototype development, product testing and the adaptation and implementation of security concepts.

The Institute supports clients in industry, commerce and public administration in eliminating security problems, minimizing risks and damage, and implementing innovative business concepts securely. Highly qualified staff analyse threats and security precautions, advise clients in choosing systems, and test applications and services. Dependable cooperation is the common theme in the Institute’s many successful projects with international partners.

**Fraunhofer Institute for Computer Graphics Research IGD**

The Fraunhofer Institute for Computer Graphics Research (Fraunhofer Institut für graphische Datenverarbeitung, IGD, established in 1987) has a leading position worldwide in the field of computer graphics, performing targeted fundamental and applied research. Thirteen departments develop innovative technologies and products, prepare studies, and implement applications and systems characterized by a high degree of innovation, user acceptance, usability and ergonomic design. The wide range of applications includes fields such as virtual product development, medicine, transport, and multimedia learning and training.

For its clients Fraunhofer IGD, creates prototypes and complete systems that are optimized to specific requirements and the main focus is put on the user: the technologies developed at Fraunhofer IGD aim at supporting people in their professional and leisure activities. Research and development projects of Fraunhofer IGD are closely related to current issues in industry and commerce, and numerous spin-offs ensure that prototypes quickly become marketable products.

The Institute’s research work is grouped around three R&D themes: semantic conservation throughout the modelling process; the interaction of computer graphics and computer vision; the information processing issues involved in three-dimensional and multi-dimensional objects. Core areas of expertise at Fraunhofer IGD include rendering; medical imaging; 3D GIS; visualization and simulation; modelling; virtual and augmented reality; ambient intelligence; security technologies; and usability engineering.

Research departments include: Interactive Multimedia Appliances; Industrial Applications; Virtual and Augmented Reality; Real-time Solutions for Simulation and Visual Analysis; Cognitive Computing and
Medical Imaging; Graphic Information Systems; E-Learning and Knowledge Management; and Security Technology for Graphic and Communication Systems. Fraunhofer IGD closely cooperates with TU Darmstadt, as well as with the University of Rostock and with TU Graz in Austria. The Centre for Advanced Media Technology (CAMTech) in Singapore, founded in 1998, ensures the Institute’s presence in the future markets of Asia.

Fraunhofer IGD undertakes cooperative projects of the following types: feasibility and applicability studies on software systems and technologies; development of application scenarios; support in the selection and introduction of software systems, and consulting and training on specific programs; designing concepts for the implementation of software components; software development; prototype implementation; proof-of-concept implementation; production system implementation; adaptation of in-house or commercial software systems; porting to other hardware platforms and operating systems.

Fraunhofer Institute for Structural Durability and System Reliability LBF

The Fraunhofer LBF (Fraunhofer Institut für Betriebsfestigkeit und Systemzuverlässigkeit LBF, established in 1938 and based in Darmstadt since 1950) has more than 70 years of experience and tradition in structural durability. It is one of the older, more established operating institutes of the FhG. Structural durability, system reliability and adaptronics are its designated core competencies. A team of staff members including the scientists of the associated Competence Center for System Reliability and Machine Acoustics SzM at the TU Darmstadt, the engineers evaluate and create specially tailored solutions for all safety components – from the material to the system, from the idea to the product.

Using a combination of experimental and numerical methods, they are able to create extremely reliable tools. In addition to 12,000 square meters of multifunctional, experimental test and laboratory landscape, the engineers also apply a virtual test environment, reducing the development time. Their service offering comprises design and construction; safety strategies, reliability concepts, noise and vibration reduction; and LBF® Products. The results of Fraunhofer LBF research lengthen the life cycle of a product, the serviceability, and enhance the operational safety. Their customers range from automobile and commercial vehicle construction, track vehicle technology, shipbuilding; aerospace industry; mechanical and plant engineering; energy technology; as well as environmental and health care industries.

System Reliability: Active Systems such as ABS or active suspensions have to work reliably in order to become established in the market. A high degree of complexon and the interplay of various areas such as actuating elements, sensor systems and control technique are some of the specific challenges to cope with. An internal project aimed at developing and analysing an active interface for the implementation in the suspension strut of a passenger car.

Structural Durability: Advanced materials have to become lighter over the time, the fields of application become more and more challenging: Customers are expecting safety and convenience when they buy a mountain bike in the upper price range. The Fraunhofer LBF and a mountain bike manufacturer designed a test bike equipped with more than 30 sensors. Subsequent tests show how the bike has been employed and the test procedures can be adjusted to the results. The manufacturer is able to optimise construction and geometry and new materials undergo realistic tests. Such methods also detect potential weak spots.

Adaptronics: This new technology enables structures to respond actively to changing service conditions. Sensor and actuator technologies are integrated in the structure and represented through functional materials. These functional materials, also called “smart materials”, are able to translate specific physical quantities into other physical quantities. As the “Quiet Car” project illustrates, objectionable vibrations in the engine compartment or in the chassis can be actively absorbed.
City of Science Darmstadt Has Its Own Element on the Periodic Table

How many other cities out there that claim to be a “City of Science” have its own element on the Periodic Table? Darmstadtium (Ds) Periodic table number 110 was discovered in 1994 at GSI Helmholtz Centre for Heavy Ion Research near City of Science Darmstadt. Quite an achievement in the Chemical/Pharmaceutical/Biotech-Cluster.

darmstadtium Congress Centre, Photo: Ulrich Mathias
The Clusters

Over Darmstadt’s history, a unique relationship has developed between scientific institutions (both public and private) and business in some key sectors.

The location of larger companies in the City of Science Darmstadt has fostered the further development of many medium and smaller companies, striving to maximize their relationship with their larger clients, supplying the product quicker as well as being more directly involved in design and product development.

In some cases companies have just developed here, some companies have relocated here, and other have opened up branches or operations so that they could be near their key clients.

We have come to refer to this clustering of companies and institutions in key sectors as “Clusters”. In addition to the clustering City of Science Darmstadt’s key clusters listed in this section, we also have a relationship between the clusters, where one product or idea can fuel the development and growth in another.
Our Space and Aviation Technology Cluster

Long before Captain Kirk boldly went into the final frontier, men had space exploration and travel on their minds. Darmstadt has already played a big role in development of Aviation. In 1908, the legendary aviator August Euler build the first airplane factory and established the first German flight school (both in Darmstadt). In 1910, he established the world record for continuous flight with 3 hours, 6 minutes, and 18 seconds at his airfield. Aviation was only getting started in Darmstadt.

ESOC

City of Science Darmstadt plays a role similar to NASA’s Houston, in that it is home to ESOC, the European Space Operations Centre, the control center of the European Space Agency (ESA). Established in 1967, it is Europe’s gateway to space. ESOC is responsible for the operation of all ESA satellites, and for the worldwide network of ground control stations they require. To date, ESOC has undertaken the operational control of more than 56 European satellites. Among them are Venus Express, Mars Express, the comet chaser Rosetta, the earth observation satellites Envisat and ERS 1 and 2, the lunar probe SMART-1, and the Titan landing probe Huygens.

Control centre: The ESOC main control room in Darmstadt takes control of a satellite in the Launch and Early Orbit Phase (LEOP). ESOC retains control until the satellite has reached its definitive orbit. The Darmstadt control center is in constant communication with the entire ESA ground station network. As soon as the satellite has reached its routine orbit, control is handed over to a special secondary control room.
Ground stations: ESOC houses the command center of the worldwide network of ground stations, called ESTRACK. The network includes eight of ESA’s own ground stations as well as other ground stations in cooperation with organizations such as CNES, NASA, JAXA, NSC, and others.

Mission analysis: Selection and calculation of possible orbits; calculation of the rocket flight path and launch window; research on hazards; disposition and long term progress of space junk.

Flight dynamics: Calculation of the position, velocity and orientation of the satellite in space. This is necessary not only in the planning phase, but also for the routine phase and before all maneuvers that are performed with the satellite. ESOC also calculates fly-bys in advance for the ground stations.

Imagine what being close to Europe’s gateway to space and technology could mean for your business!

EUMETSAT
When you consider the magnitude of some of our natural disasters in the past few decades, you realize that the ability to reliably predict the weather (especially its extremes), is one of the most important achievements of modern meteorology. EUMETSAT’s satellite systems are dedicated primarily to supporting weather prediction in meteorological operations rooms. Increasingly, however, their use has become increasingly important for climate research, as well as for applications in oceanography and hydrology. EUMETSAT’s satellites provide data around the clock.

The Darmstadt headquarters of the international organization, founded in 1986, houses not only the satellite operations centre – known as the Control Centre – but also facilities for
project management and the development of new satellite programs, and for the creation of new meteorological services and products. The organization's service and administrative departments are also located in Darmstadt.

**EUMETSAT's primary tasks include:**

- **Operating Satellites** in geostationary and polar orbits
- **Developing Satellites** including the MTG (Meteosat Third Generation) and EPS-SO (EUMETSAT Polar System Second Generation)
- **Monitoring Weather** information coming from the EUMETSAT satellites provide incredible resources for weather forecasting by EUMETSAT users
- **Monitoring Climate** providing data necessary for governments and decision makers to define and implement appropriate environmental policies
- **Monitoring Oceans** providing data related to the current and future state of the seas and ocean,
- **Atmospheric Composition** the World Health Organization has established that air pollution is responsible for many things that can adversely affect our health. EUMETSAT is providing air quality monitoring and forecast services
- **Distributing Data** EUMETSAT is delivering data and products in real time to users around the world

Think about what satellite technology could mean to your business and how you might be able to profit from your proximity to it in City of Science Darmstadt!
**IT and Software Cluster**

City of Science Darmstadt is an important place for IT in Europe. There are several large, various small and medium sized companies as well as several IT research facilities here. There are more than 600 IT companies in City of Science Darmstadt, with the main focus on Telecommunication and business-software development. The IT sector here is a good mixture between a large number of multinationals, startups, and established companies that leads to a stable and dynamic structure, combining the entrepreneurial spirit with long term experience. We’ve highlighted two of the IT companies in this section. Darmstadt has companies as well as our universities, colleges, and scientific institutions in place to help you with your IT needs and you can benefit from being a part of our IT and Software Cluster.

**Software AG**

Information and Communication Technologies (ICT) is now the backbone and lifeline of all areas of science and industry, and it has been and will continue to be an important growth engine and a driving force for innovation. Since 1969, the Software AG has been one of the leaders in the world market for mission-critical software infrastructure solutions based on open standards. The company is a leader in Service Oriented Architectures (SOA) and supports its clients in developing powerful enterprise applications. Products such as Adabas, Crossvision, Natural and Tamino help more than 3,000 clients to utilize the full potential of their IT infrastructure and add value to their existing systems. Software AG’s technologies allow companies to develop flexible business applications and processes, increase the performance and the useful life of their core systems, manage their corporate data efficiently, and control their service oriented architectures.

As an actor in a highly innovative and fast changing market, Software AG works hand in hand with science and research in order to identify the latest scientific trends and develop them for the market. Moreover, close cooperation with universities is also necessary to recruit specialists whose education incorporates the latest in scientific knowledge. Software AG has conducted several projects in the Darmstadt area with great success thanks to the excellent academic environment. If universities are to respond adequately to future markets, then business must identify those markets early on, and support the educational sector in fulfilling the future demands.

Experts predict a worldwide market for SOA of up to € 50 billion in the next five years. SOA calls for new thinking about IT and how it is used. It represents a move away from the throwaway IT society, towards a sustainable way of using existing solutions. That means future developers must increasingly see things from the client’s point of view as programs are increasingly custom tailored to specific businesses.

Software AG is committed to City of Science Darmstadt. The proximity to the Rhine-Main metropolitan area, the outstanding research scene, and the excellent workforce of locally-educated specialists are good reasons for Software AG to advance its global growth strategy from its base in Darmstadt.

**DARZ GmbH**

DARZ is a shining example of innovation within the IT community of Darmstadt. They took a former vault building of the central bank in Darmstadt (used until 2005) and have converted it to a secure data centre where companies’ data is treated like gold. They have gone to great lengths to provide Green IT and it is considered to be one of the most environmentally friendly data centers in Europe. Besides the mixture of mechanical, mixed operation, and pure indirect outside air cooling, they incorporated things like 100 percent biodegradable rubber double floors. They were recognized in 2015 with the German Computer Center award in the “Overall Energy Efficiency” category.
The Automation (Engineering/ Mechatronics) Cluster

Mechatronics is a multidisciplinary area of engineering, based on classical disciplines like mechanical engineering, precision engineering, electrical engineering and information technology. Both the TU Darmstadt (Technical University) and h_da (University of Applied Science) offer courses of study in mechatronics.

The TU Darmstadt has developed mechatronical core competencies in several fields of research, so they are one of the universities leading international mechatronic research. In 1985 ISRA Vision Systems AG was spun off from TU Darmstadt and is a global player in the field of mechatronics. In 2000 Mechatronix GmbH was spun off as well.

The Fraunhofer - LBF (Institute for Structural Durability and System Reliability) has a body of expertise of more than 70 years in research and development. Its core competences are supplemented by research in system reliability and adaptronics, since the automotive and machine construction sectors are more and more based on mechatronic and adaptronic structures which integrate sensors, actuators, electronics, and control technology.

Imagine all that your machines will be able when you’re in the middle of City of Science Darmstadt’s Automation Cluster!

Engineering & Mechatronic companies

- Akasol Engineering GmbH (electro-mobility)
- Brüel & Kjaer Vibro GmbH (condition monitoring equipment and solutions for rotation machinery)
- Diatess Hermann Költgen GmbH (hole and precision measurement)
- Fördersysteme Engineering GmbH (industrial equipment and electronic controlling)
- Goebel IMS Schneid- und Wickelsysteme GmbH (high quality slitter rewinders)
- HBM GmbH (Hottinger Baldwin) (weighing systems, precision, measurement and system technology)
- Horiba Automotive Test Systems GmbH (Test and measurement systems especially for the automotive industry)
- Instron Structural Testing Systems GmbH (testing machines, automates and equipment)
- Isra Vision AG (machine vision systems for robot, surgence and quality vision)
- Magnum GmbH (engineering services, fuel cell test technology, pipeline monitoring)
- Mecatronix AG (magnetic, levitation, vibration control, force motion control)
- Mechatronic AG (electronic systems for medical devices)
- Schenck Process GmbH (process technologies for industrial weighing, feeding, screening and automation)
- Schenck RoTec GmbH (balancing and diagnostic systems and automation)
- SHS Fördertechnik GmbH & Co. KG (investment goods for transport and storage especially air cargo)
The Chemical/ Pharmaceutical/ Biotech Cluster

Going back more than 300 years, the Chemical/ Pharmaceutical/ Biotech - Cluster, is one of the oldest clusters in Darmstadt. It is also one of the reasons that Darmstadt, is the “City of Science”. Darmstadt has the history of Merck as well as a rich tradition of Otto Röhm whose Röhm & Haas GmbH moved their headquarters to Darmstadt and are responsible for giving us enzyme based washing detergent and PLEXIGLAS®. Röhm & Haas GmbH, through a series of mergers and acquisitions is now part of Evonik Industries. Döhler GmbH is a worldwide leading manufacturer of fruit juice concentrates, fruit preparations, compounds, ingredient systems, emulsions, flavours and colors for drinks and dairy products.

We've decided to highlight three companies in this section, but there are many more companies making this a very dynamic cluster for City of Science Darmstadt.

Imagine all the cutting edge discoveries being made in our Chemical/ Pharmaceutical/ Biotech Cluster and how being a part of it can make your business grow!

Photo: Merck

Merck/ EMD

Today the Merck Group is a global pharmaceutical and chemical powerhouse, but they started out as a single pharmacy in Darmstadt in 1688. Merck is the world’s oldest pharmaceutical and chemical company. In the US Merck KGaA is represented by EMD brand today, which stands for “Emanuel Merck Darmstadt”. The US Merck & Co. Inc. is the former American branch that was split after World War I.

In 2014, Merck Group sales totaled approximately €11.3 billion. From the start of industrial production in 1827 to first research into liquid crystals more than 100 years ago up to their entry into targeted cancer therapy with the launch of Erbitux® in 2003, many milestones in the company’s history provide
strong evidence of the pioneering spirit of the people at Merck. Merck is pursuing a strategy of “focused diversification” with the three divisions of its Pharmaceuticals business sector and the two divisions of its Chemicals business sector. The Pharmaceuticals business comprises branded prescription drugs, e.g. for the treatment of cancer, neurological and growth disorders, cardiovascular diseases and infertility. Merck also offers generics for cost efficient basic health care, as well as over the counter pharmaceutical products. The Chemicals business sector offers chemicals for sophisticated applications: liquid crystals for displays, effect pigments for industry and cosmetics, analytical reagents and test kits, as well as products and services along the entire process chain of the pharmaceutical and biotech industry.

Merck has made some move to keep their growth in the upward direction in the past few years via some mergers and acquisitions. Merck took over of Serono SA in 2007. In 2010, Merck acquired the Millipore Corporation from Billerica. In 2013 they bought AZ Electronic Materials SA, in a move to increase its offering of specialty chemicals to the electronics industry.

As one of the largest employees in southern Hessen, Merck plays a central role in supporting and sponsoring cultural, social and sports activities in the region. The company also attaches special importance to promoting young scientific talent.

Merck’s firm commitment to the site is not simply a tradition: Recent comparative studies show the region to rank among the best in terms of transport connections, scientific environment, employee qualifications and quality of life.


**Evonik Industries**

Evonik Industries was created on 12 September 2007 as a result of restructuring of the mining and technology group RAG. Evonik Industries united the business areas of chemicals, energy and real estate of RAG, Evonik Industries, through a series of acquisitions and mergers that includes Röhm GmbH, Röhm & Haas GmbH, Degussa AG, Hüls AG, Stockhausen GmbH, they have quite a history in this cluster. Evonik Industries history and ties to City of Science Darmstadt go back more than a century.

Via Röhm & Haas, Evonik Industries has brought BURNUS® (The enzyme based washing machine detergent) and PLEXIGLAS® (transparent hard and shatter-proof acrylic glass). Röhm & Hass were founded in 1907 and moved their headquarters to Darmstadt in 1909. Via Degussa AG, Evonik has brought us AEROSIL®, and its many uses and products. Evonik Industries is one of the companies growing and thriving in the Chemical/Pharmaceutical/Biotech Cluster.

**Döhler GmbH**

Döhler GmbH has been setting standards in the growth industry of food and drinks, from its City of Science Darmstadt headquarters since 1957. Today Döhler is a worldwide leading manufacturer of fruit juice concentrates, fruit preparations, compounds, ingredient systems, emulsions, flavours and colors for drinks and dairy products, with more than 30 subsidiaries and sales offices in over 60 countries throughout the world.

Founded in 1838 as a spice mill, Döhler has since developed into a major industrial enterprise. In 1945 the company moved from East to West Germany, and made a new start with the production of flavours and baking ingredients. A pioneer in the new market for natural soft drinks, Döhler soon launched compounds and flavours for the growing beverage industry. Döhler might be based in City of Science Darmstadt but they operate around the world, having factories and subsidiaries in western and eastern Europe, India, Mexico, Brazil, and China.
The solutions Döhler offers today are the result of decades of scientific work – often carried out in co-
operation with colleges and universities – and expertise in the field of fruit processing technology. Döh-
ler’s products are created based on the careful study of worldwide markets, and of regional differences
in consumer expectations. In the face of ever faster changing trends, high flexibility and ever faster con-
versions are required.

Today the head office in Darmstadt develops new assortment concepts and product suggestions every
day for the worldwide beverage, milk and ice cream industry. The experts at Döhler offer customers
comprehensive consultation, from the idea to its implementation, with attention to issues of marketing
strategies, application and process engineering, filling and packaging technology, microbiology, sensor
technology, food processing law, and health issues, which are continually gaining importance. Further-
more, our subsidiary Döhler Engineering offers services including planning and building of product mix-
ing plants and syrup rooms.

Some of the companies in the area
- AB Enzymes GmbH
- Anamed Electrophorese GmbH
- AppiChem GmbH
- Aquanova German Soubilisate Technologies GmbH
- Bayer Polymers Sheet Europoe GmbH
- CytoPharma GmbH
- CytoTools AG
- Derma Tools Biotech GmbH
- Döhler
- Evonik Industries AG
- Evonik RohMay Additives GmbH
- Gamma Chemie GmbH
- Genetrace Biotechnologische Geräte GmbH
- Genius Biotechnologie GmbH
- Hamilton Deutschland GmbH
- Inform GmbH
- L.O.T. – Oriel GmbH & CO. KG
- Merck KGaA/EMD Serono
- Mylan dura GmbH
- N-Zyme BioTec GmbH
- Premier Research Group 2 Ltd. & Co. KG
- Stoe&Cie GmbH
- Steigerwald Arzneimittelwerk GmbH
- Sus Tech GmbH & Co. KG
- TempiaTech GmbH
- WWR International GmbH
- Zedira GmbH
Hair Care and Cosmetic Cluster

If some of City of Science Darmstadt’s other clusters seem too far removed from the industry your company is aligned, maybe you can relate more to our Hair Care and Cosmetics Cluster, because these are products used by everyone on a daily basis. Research and Development from the other clusters have spilled over into this cluster. Beauty products, fragrances, hair cosmetics, and professional styling products have long been produced by companies like Wella, Goldwell, Döhler, and Röhm in a variety of well known products that you’ve probably seen on store shelves or hair salons near you. New York, London, Paris and Darmstadt, yes Darmstadt have long appeared on bottles of products from John Frieda.

A lot has changed in this industry in the last twenty years or so. Kao Corporation has bought the product lines from Goldwell and John Frieda. Through it all, City of Science Darmstadt has a Hair Care and Cosmetic products heritage and remains aligned to a variety of products.

The Environmental and Sustainable Energy Technologies Cluster

“Our cities must meet special challenges. The times when ecology, economy, and equal social opportunities were regarded as competing objectives are over. Nowadays, everybody speaks about sustainability in all relevant fields of action, and works like ‘green building’, ‘green IT’, ‘green technology’ speak for themselves. The topic has even found its way into financial centres such as the Dow Jones Sustainability Index”… Jochen Partsch, Lord Mayor since 2011.

All of the clusters mentioned earlier, show how companies have benefited from the location of our numerous research institutions in terms of innovation and growth but we need to also make sure that all of this is being done with an eye towards sustainability and protecting our environment. We’re seeing progress in City of Science Darmstadt but we know there is more to do. We’ve commissioned a study to be done within the city to determine how green and sustainable we really are. We’ll use the outcome of this study to drive our internal policies and plan for the future.

“Darmstadt is pleased that Alnatura the leading organic supermarket chain in Germany, was founded in 1984 by Götz Rehn is moving their corporate headquarters to Darmstadt. They have more than 80 stores throughout Germany and around 2,200 employees. We can build our ‘green city’ on numerous strong foundations. Together with citizens, businesses and scientists, we will realize the vision of ‘green city City of Science Darmstadt’” Jochen Partsch, Lord Mayor since 2011.
City of Science Darmstadt, your Business Partner

Regardless of if you have an established business and you’re looking to set up some operations in Darmstadt or if you’re just starting out and looking to launch your newest venture here, City of Science Darmstadt wants to see you succeed.

Business Resonance
Evonik Industries - Gregor Hetzke, Head of Advanced Intermediates
"We at Evonik Industries appreciate the location Darmstadt very much. Darmstadt is a centre for quality living combined with a traffic favourable situation, qualified employees and an attractive environment."

Hottinger Baldwin Messtechnik GmbH - Andreas Hüllhorst, CEO & Managing Director
"The technical competence and innovation strength of our employees is the key to our sustainable success in the measurement technique sector. The City of Science Darmstadt, very close to the Technical University Darmstadt and mechatronics and software companies in the region, offers us an ideal environment. The short distance to Frankfurt airport helps us to be successful on a global level and to reach our customers and subsidiaries around the world very fast."

Merck KGaA - Dr. Bernd Reckmann, Member of the Executive Board and personally liable partner
"Merck has always been closely associated with Darmstadt, the headquarter of the enterprise since 1668. In this city, we appreciate the proximity to the people, the outstanding scientific environment and the special competence and knowledge of our staff."

Software AG - Karl-Heinz Streibich, CEO
"The success of Software AG depends on growth. Growth needs innovation. The breeding ground of innovations is top level research and a tight network between economy and science. Due to the University of Applied Sciences Darmstadt, the Technical University of Darmstadt, the Fraunhofer Institutes and the Software - Cluster Rhein-Main-Neckar, Darmstadt offers an excellent base and direct access to highly qualified personnel. Thus Darmstadt is an ideal and logical location for us."

Sparkasse Darmstadt - Georg Sellner, Manager of the Board
"The number of inhabitants in Darmstadt grows every year. Is there a better barometer for the economic prosperity of this economic region? To be able to reach Frankfurt Airports Terminal 1 in only 20 minutes is an outstanding location advantage."

City of Science Darmstadt, City of “Short Ways”
In City of Science Darmstadt we have a tradition of “Short Ways” or “Short Paths”, this is an “informal” way of working that allows the city to work with the institutions and companies to get things done with minimal resistance. Like water finding its way through improbable places, we can find a way. We have a good working relationship with all our business partners.

Location, Location, Location
Darmstadt is less than 30 minutes away from Frankfurt Airport. This is one of the busiest airports in Europe and your gateway to Europe and the world. City of Science Darmstadt also has access to a good regional train network, allowing you to easily travel to other parts of Europe or to transport your product. Two of Germany’s famous Autobahns are nearby, the A5 and A67, so you can take your car on a road trip to visit clients.
For The Established Business Looking to Set up Operations
Setting up new or moving business operations is never easy but we have a history of successful companies moving to City of Science Darmstadt. Take advantage of the research and development culture built into our city, as well as the well-educated and trained workforce.

We can use our “Short Ways” to help you plan your move. We can be your single point of contact in the process, introducing you to our various partners, who all want to see your business succeed!

Strong international relations: San Antonio, Texas, Mayor Ivy Taylor and Darmstadt Lord Mayor Jochen Partsch signing a letter of intent that prepares further joint projects. Photo: Ulrich Mathias

The Department of Economy & Urban Development
Regardless of if you’re an established company that wants to do business in City of Science Darmstadt or if you want to launch your newest venture here, the Department of Economy & Urban Development is your business partner in City of Science Darmstadt.

We can use our “Short Paths” to setup the relationships that you need to succeed!

Department of Economy & Urban Development
Phone: +49(0) 6151/13-4431
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Email: business@darmstadt.de
Living in City of Science Darmstadt

City of Science Darmstadt knows that man and women don’t just live for their work and that we all have a completely different life outside of what pays our bills. In this section we’d like to talk about that other life.

City of Science Darmstadt’s Relationship with America

City of Science Darmstadt’s current relationship with America dates back to March 25, 1945, when U.S. forces entered the city. After World War II ended, Darmstadt was one of the 100 plus communities where U.S. forces were stationed. Over the years thousands of American soldiers and their families have been stationed in the area. The Army Garrison Darmstadt was deactivated on September 30, 2008, as part of U.S. military’s transformation within Germany.

While the military configurations have changed over years, the people of Darmstadt have had good relations with their American visitors. In many of the years that the military was here, the citizens of Darmstadt and the military celebrated German/American friendship festivals. Citizens of Darmstadt also acquired a taste for American sports, like baseball, basketball, and even American Football.

The former Kelley-Barracks, land being repurposed since the American military’s ongoing transformation within Germany, is currently being reviewed with the goal of multiple zoning areas available for development. The military might have left Darmstadt, but the friendship remains and Americans are welcome in Darmstadt.
**Sports and Recreation**
City of Science Darmstadt offers its residents and visitors a lot of sport and recreational options. Darmstadt is very excited that our SV Darmstadt 98 soccer club has made the move from the second German soccer league into the first German soccer league (Bundesliga), where they’ll be playing in the 2015/16 season. We offer baseball, basketball, and even an American Football club.

City of Science Darmstadt has a lot of forest area that residents can enjoy and commune with nature. We also have one of the biggest running communities in Germany, so you can run by yourself or find someone to join you on your run.

**When You Feel Homesick**
Let’s face it, when you move to another city far away from your home, you might get homesick. Darmstadt has many of the things that you might think you’ll miss, waiting for you. We have Lions, Rotary, and Toastmaster clubs, with other English speakers, waiting for you to visit.

**Our Schools**
When moving to a new town, parents worry about what kind of educational opportunities will be available for their kids. In City of Science Darmstadt, there are 42 public schools, which are attended by nearly 29,000 students, so chances are good that there is a school that is right for your kids. To highlight some of the options, we have:

- 18 Primary schools,
- An elementary and secondary school,
- Five comprehensive schools,
- Four special schools and
- Eight high schools and
- Six vocational schools.

There are also private schools available to balance out the options available

School Information Can Be Found at: 

**You’re Cordially Invited**
What will be your Darmstadt story or stories? You’re cordially invited to become a part of City of Science Darmstadt history and of our future. We’re looking for people that can build upon our history scientific discovery and advancement, people that will help us to continually renew our title, City of Science. Contact us today and let’s get started!

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