

igus humanoid ready for the World Cup

The motion plastics specialist supports designers in new fields of research and application of low-cost robotics

A joint project of the University of Bonn and the Cologne-based company igus GmbH shows that the applications of robots are not just limited to industrial purposes. A humanoid robot was designed and steadily developed over the last two years. The project demonstrates future possibilities in the field of robotics beyond classical industrial applications.

For over two years, a research group of the University of Bonn and the motion plastics specialist igus have been collaborating in the development of a humanoid robot. The robot has already won the RoboCup soccer championship in 2012 as well as the RoboCup Design Award in July last year. Now it has gone another step forward in its evolution and now has new potential in terms of autonomy and fluid motion. It can now visually detect a football, approach it and strike the ball into the goal. The body elements, made of plastic designed by igus, support and protect the robot when tackled. If this results in a fall, the latest version of the robot is capable of standing up by itself again from the prone and supine positions as well as from on its side. In this way, the igus humanoid already has the best prerequisites for a successful participation in the RoboCup Soccer World Cup next year.

Presence of future robots in everyday life

The design and engineering of the outer shape as well as the supporting parts were contributions from igus, and were produced using the laser-sintering process. In the next advancement energy and data shall be safely guided inside the robot with the help of chainflex cables. The project illustrates new applications for robots. In this way the use of a similar humanoid is conceivable in the area of domestic help in the future. igus has been active for years in the field of robotics and low-cost automation. For example, the robolink D enables the implementation of individual and cost-effective robotic concepts by means of a directly driven articulated arm made of plastic and aluminium. Customers can profit from low costs and the advantages of motion

plastics from igus: Low friction and wear coefficients, low weight and freedom from lubrication and maintenance.

The igus humanoid in action: https://youtu.be/QeP_Df5CNQQ

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ABOUT IGUS:

igus GmbH is a globally leading manufacturer of energy chain systems and polymer plain bearings. The Cologne-based family business has offices in 36 countries and employs around 2,700 people around the world. In 2014, igus generated a turnover of 469 million euros with motion plastics, plastic components for moving applications. igus operates the largest test laboratories and factories in its sector to offer customers quick turnaround times on innovative products and solutions tailored to their needs.

The terms "igus", "chainflex", "CFRIP", "conprotect", "CTD", "drylin", "dry-tech", "dryspin", "easy chain", "e-chain", "e-chain systems", "e-ketten", "e-kettensysteme", "e-skin", "energy chain", "energy chain systems", "flizz", "iglide", "iglidur", "igubal", "invis", "manus", "motion plastics", "pikchain", "readychain", "readycable", "speedigus", "triflex", "twisterchain", "plastics for longer life", "robolink", "xiros", "xirodur" und "vector" are protected by trademark laws in the Federal Republic of Germany and internationally, where applicable.

Captions:



Picture PM5715-1

The interior of the winning igus humanoid is protected by specially developed and 3D printed body elements. (Source: igus GmbH)



Picture PM5715-2

The robotlink robot joint kit provides users the ability to implement cost-effective robotic systems using lubrication- and maintenance-free motion plastics from igus. (Source: igus GmbH)