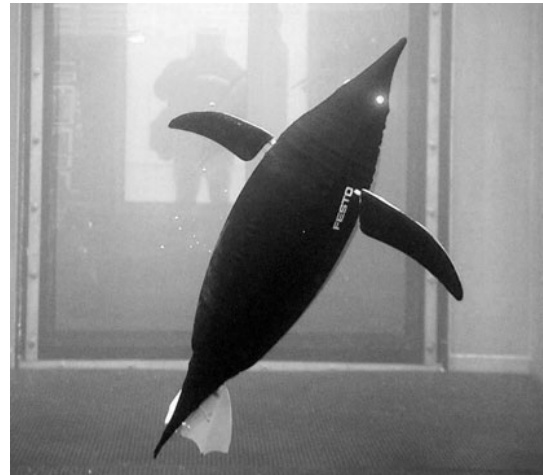


IN THE SPOTLIGHT

■ Flying robo-penguin

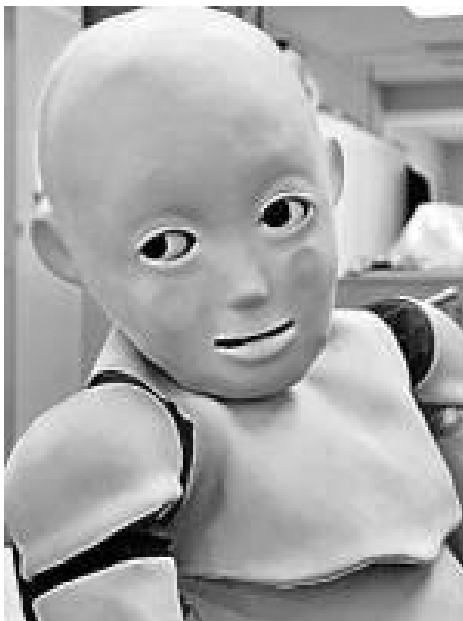
German company Festo created a cybernetic penguin that can not only swim in the water but also fly. AquaPenguin was born from Bionic Learning Network Project. However it has not the feathers, it looks like a real penguin - covered by special fabric, it has a beak, white belly and oval shapes. Framework of a robot is so flexible that it swims smoother than an original. Ambitious Festo's engineers made a step forward that Mother Nature and constructed also an AirPenguin.

More information at <http://www.festo.com/>



■ Child-bodied robot can learn

His constructor promises that CB2 will speak for next two years. Within last two years the robot mastered walking. It is one from the most technically advanced Japanese robots. He can learn from people. CB2 looks and behaves like a human child. It weighs ca 33 kg and is 130 cm tall. Child Robot with Biomimetic Body explores the environment by watching people and things, learns like a real child. It can remember a facial expression and associate it with the person's mood. The scientist working on CB2 - engineers, psychologists, neurologists - want to mimic the mentality of the little child who can categorize the mother's facial expressions to one of few categories: sadness or joy, for example. The aim of the research, within which the CB2 has been developed, is making of the intelligent machines with which people will be able to communicate just like with other, real people. The research is financed by state Japanese Science and Technology Agency. Professor Minoru Osada from University of Osaka, Japan, who leads CB2 project, explains: "Children have very limited software but they also can learn. Currently CB2 can nearly independent stand up, can walk using 51 servomotors on compressed air. Its "skin" is made from grey silicon and equipped with over 200 sensors enable sense feeling - thanks to them the machine knows when someone touch it. As yet, the child robot cannot speak, but Professor Osada claims that in two years CB2 will speak simple sentences and it will be equally developed as two-year human child. In 2050, as Professor maintains, a robotic football team will win a match opposite the human team.



Source: <http://www.jst.go.jp/EN>

■ The new kind of traffic is coming?

In March in Orange area, N.Y., a flying car called "Terrafugia Transition" passed the tests. According to one of the constructors, Carl Dietrich, "Terrafugia Transition" means a revolution in personal transport. It is the first car with folded wings. The vehicle is able to fly distance of 640 km on one petrol tank. Its fuel consumption is 1 US gallon (3.8 l) fuel on 50 km distance. During flying the car develops speed 184 km per hour. It has 4 wheels, so after landing and wings folding it can join road traffic. According to press, in March the vehicle made six flights. After verification "Terrafugia Transition" received certifications from the FAA (Federal Aviation Administration). Currently price is 194,000 \$. Start with mass-production is planned in 2011.

Source: <http://www.terraugia.com/>

■ Japanese artificial legs

Developed by Honda Company artificial, computer controlled legs are destined for old people, patient required rehabilitation of the limbs, and those which improving of walking could help in work factory workers, for example. Let's remember that in 2002 Honda showed first in the world two-legged walking robot ASIMO. "We used technology from ASIMO (Advanced Step in Innovative MObility) to construct artificial legs" - said to AFP agency Masato Hirose, chief engineer in Honda Science and Development Department. Computer control legs weigh 6.5 kg and they are composed of a saddle, leg-shaped handles, and shoes. While the user sit in a saddle just like on a bicycle, movable handles bends in the rhythm of his steps. Motion is enabled thanks to two engines that are operated by sensors located in the shoes.

Source: <http://world.honda.com/ASIMO/>



■ Terminal that can recognise the person by vein system

In the Institute of Mathematical Machines (IMM) in Warsaw has been developed a biometric terminal that can recognize a person by palm's vein system, which is unique for everybody. According to the scientists, the system can be used as a work time registration system or access check device. Sampling biometric marks is the most reliable and verified method for identification of the people. Usually biometric systems use facial features, fingerprints, image of iris, and geometry of a palm. Scientists are looking for new, more forgery proof methods. According to Leon Rozbicki from IMM, biometric method "veins and finger" is the most effective because it is resistant to falsification and gives most of all characteristic points possible to compare with original. The vein system is unchangeable and specific for each person since the fourth year of life. "To scan image of the vein system the infrared is used. Infrared light penetrates into a palm, and reacts with unoxidized blood in veins. Blood lightened in that way give dark colour in the photography. Obtained image is processed to select the data most useful for identification. It is prepared to further digital analysis. The information about vein system is processed and stored as a pattern not an image" - Mr Rozbicki explains.

Biometric terminal is designed to hang on the wall. It projects information messages for user. It is estimated that cost of this device in average large company are refunded in 3-6 months.

Source: <http://www.imm.org.pl/>