P R E S S E - I N F O R M A T I O N

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Fresenius awards 2006 Inventors' Prize

Three innovations presented during the Inventors' Fair at this year's Medica trade fair were recognized with the Fresenius Inventors' Prize, taking home a total €12,000 in prize money. The top prize – and €5,000 – went to a special pen designed by Regensburg technical college professors Jürgen Kempf, Christian Hook and Georg Scharfenberg as well as Dr. Bernhard Sick and Christian Gruber from Passau University. The innovators equipped a pen with sensors to record the neuromuscular activity of the hand. In second place, Dr. Michael Arnhold from Eisenberg will receive €3,000 for developing two orthopedic surgical instruments that can remove worn implants with less bone damage. As an indication of the level of this year's participants, third prize was divided between two entries: a nitrogen monoxide machine from University lecturer Dr. Christoph Suschek from the University Hospital Aachen and a cold-light source to illuminate the wrists of newborns developed by Bernd Riedmüller from Aalen, Germany. Both will receive €2,000 for their innovations.

The refined sensors within the pen that won first place record tilt, position and movements of the pen tip as well as the pressure applied to both the tip and by the fingers gripping the pen. "The movements of the hand are a key guide to neuromuscular activity. The sensor pen provides data that can prove very useful in the diagnosis of diseases such as Parkinson's, schizophrenia or stroke. In addition, the neuromuscular activity can highlight the impact of dosages or side

effects from medications, reveal drug use or reflect stressful situations," explained Professor Jürgen Kempf. The sensor pen is already being tested in various clinics and laboratories.

"Only a few implant makers deal with the removal of worn implants," said Dr. Michael Arnhold, who works in the orthopedic ward of the Rudolf Elle Hospital in Eisenberg, Germany. The hospital is also home to the orthopedic professorship of Friedrich Schiller University, Jena, Germany. Current equipment is rarely designed to carefully remove worn implants with minimal damage to bones. This provided the spark for Michael Arnhold's innovations. His universal removal tool for hip- and knee-joint replacements either supports itself or is attached directly to the implants to provide better use of force during the removal. Michael Arnhold has already applied for a patent for the tool.

University lecturer Dr. Christoph Suschek from the University Hospital Aachen developed a machine that could drastically reduce the costs for medical procedures using nitrogen monoxide. Because of its ability to expand vessels even at low dosages, the gas is used during acute lung failure or in newborns with difficulty breathing. According to Dr. Suschek, the normal daily dosage for a child can now cost as much as €3,500 but the new machine can produce the same amount for less than €1. "The procedure is simple, efficient and delivers gas with a high level of purity. Most importantly, however, is that it is significantly less expensive than using nitrogen monoxide from bottles. It wouldn't only help large clinics save money but would also make nitrogen monoxide treatment in non-specialist clinics and even physicians offices possible." In his device, the biochemist and molecular biologist irradiates a liquid solution of sodium nitrite with UVA light, which decays the substance, releasing nitrogen monoxide. Unwanted and toxic by-products are removed from the solution using special chemicals.

Bernd Riedmüller from Aalen, Germany uses an intensive cold-light source to illuminate the wrists of premature and newborn babies so that doctors can more easily locate tiny arteries for needle insertion. Doctors need such access, for example, to continuously monitor the blood pressure of newborn and premature babies in intensive care.

A jury including doctors, patent specialists and a representative from the German Medical Technology Association (BVMed) selected the winners of the Inventors' Prize from more than 20 entries presented during the Inventors' Fair. The Fresenius health care group hopes the Inventors' Fair will help inventors and researchers forge contacts with the medical industry so that as many innovations as possible can be brought to market and aid in the care of patients. Participants are provided with a Medica stand by Fresenius at no charge to present their developments to specialists and media representatives from around the world.

The Fresenius Inventors' Fair can be found during MEDICA in Hall 7, Level 1 (stand numbers D50 to E60. MEDICA is open from 10 a.m. to 6:30 p.m. from November 15 to November 17 and from 10 a.m. to 5 p.m. on November 18. Further information on the Inventors' Fair can be found on the Internet at www.fresenius-erfindermesse.de and www.medica.de.

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Fresenius is a health care group with international operations, providing products and services for dialysis, hospital and the ambulatory medical care of patients. In 2006 group sales are expected to increase to more than € 10.7 billion. On September 30, 2006 the Fresenius Group had 104,179 employees worldwide.