TryEngineering Today!

The monthly newsletter of TryEngineering - find out more at www.tryengineering.org

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Reconnaissance Robot

Boeing and iRobot Corporation are working together to engineer and develop a next-generation, small unmanned ground vehicle (SUGV) called the SUGV Early. The vehicle will provide military, civil and commercial users with unprecedented reconnaissance and secure, real-time intelligence capabilities.

The SUGV Early will be a smaller, lighter version of the combat-proven iRobot PackBot®, which is used to safely disarm Improvised Explosive Devices and search buildings, caves, and tunnels.

The remotely operated and highly maneuverable SUGV Early will feature a video camera and commercial electro-optics, infrared sensors mounted on an articulated manipulator arm and a track-driven chassis that will allow it to negotiate rough terrain and stairs.

The 30-pound unit is designed for use in a wide range of hazardous situations, such as bomb disposal and disaster relief operations. The system will be ready for delivery in 2008.

iRobot PackBot
Image Credit: iRobot Corporation

Find out more at www.irobot.com or www.boeing.com.

Vaccine for Treatment of Nicotine Addiction

Cytos Biotechnology AG of Switzerland has entered into an exclusive global commercial license agreement with Novartis of the U.S. to develop, manufacture and commercialize CYT002-NicQb, a therapeutic vaccine in phase II clinical development for the treatment of nicotine addiction. Worldwide, there are 1.3 billion smokers and with 4.9 million tobacco- related deaths per year, tobacco use is the leading cause of preventable death in the world today.

Cytos Biotechnology AG specializes in the discovery, development and commercialization of a new class of biopharmaceutical products - the ImmunodrugsTM. CYT002-NicQb is based on Cytos Biotechnology's Immunodrug platform. The vaccine market, including therapeutic vaccines, represents an increasingly attractive segment of the healthcare market and is an additional source of growth for large pharmaceutical companies. More details are at www.cytos.com.

Inside this issue:

Two Button Buzzer Circuit

Each month, TryEngineering Today! profiles one of the many lesson plans available on TryEngineering.org.

The Two Button Buzzer Circuit activity explores an everyday situation, where either of two or more buttons can ring a buzzer -- such as a doorbell.

Students learn how this type of circuit is structured, draw a schematic for it, and construct a two button buzzer model out of wires, a battery, buttons (switches), and a buzzer.

Final schematics are shared with other groups, with results and findings discussed as a class.

Students also learn about simple circuits and schematic diagrams. They also explore how to simulate a switch by disconnecting a wire or adding a pencil into a simple circuit.

For an advanced idea, teacher may consider challenging students to build a two button buzzer circuit that reaches from one classroom to the next.

The lesson is appropriate for students aged 8 - 14, and provides step-by-step instructions for both educators and teachers.

All lessons on TryEngineering.org provide detailed teacher and student handouts and worksheets, many which can serve as pre-activity homework assignments.

Explore this, and other lessons online at www.tryengineering.org/lesson.php.

Reengineering Car Door Panels

When the BMW 5 Series was redesigned, the vehicle interior was also upgraded. For Johnson Controls, this meant a complete new development of the door panels.

By introducing machinery and process innovations, Johnson Controls managed for the first time ever to apply a two-color foil to a single-component substrate made of natural fibers. The new process ensures both cost-effective production and a high-quality finish.

Two-color components of automotive interiors up until now have generally been produced as multiple parts before being applied to one another.

As a result, seams and gaps remain visible with this method. It also makes it difficult in some cases to observe strict weight limitations - but not so with the new design.

In the fully automated production process, machinery and tool advances ensure the color demarcation lines stay within the exacting tolerances at all times.

The BMW 5 Series currently in production at the Chinese BMW plant in Shenyang is also being fitted with these innovative door panels from Johnson Controls.

More details are at www.johnsoncontrols.com.

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Multicolor Bar Code Technology

Microsoft Corp. and the International Standard Audiovisual Number International Agency (ISAN-IA) have announced an agreement whereby ISAN-IA has licensed Microsoft's new High Capacity Color Barcode technology to assist in the identification of commercial audiovisual works such as motion pictures, video games, broadcasts, digital video recordings and other media.

The new multicolor bar code is expected to start appearing on DVD media toward the end of 2007. Current ISAN codes allow an audiovisual work to be uniquely distinguished from other works through a simple identification system, but they do not allow additional features or functions to be incorporated. Microsoft's new multicolor bar code will enable the inclusion of more data in the code itself, as well as the ability for consumers to interact with it by scanning the code with webcams and, eventually, cell phones with color cameras.

For audiovisual publishers, identification and tracking technologies will provide detailed data that can aid in royalty payments, anti-counterfeiting efforts, market analysis and a host of other business functions. For consumers, the new bar codes can be combined with Web services to offer enhanced information such as product versioning, ratings identification, parental control, product availability, special releases, contests, pricing and promotions. Software to be made available from Microsoft and ISAN-IA will interpret the bar codes and will be integrated with Web services to enable these interactions.

More details are at http://research.microsoft.com/research/hccb/.

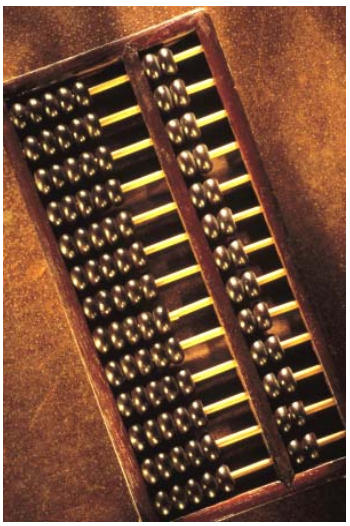
Microsoft Corp.'s High Capacity Color Barcode technology, developed within Microsoft Research, helps to identify commercial audiovisual works such as motion pictures and video games.
Image Credit: Microsoft Corporation

Invention Connection

No inventor works alone, they all work on the shoulders of previous inventors, working from their insights, inventions, and ideas. Every invention that we use today has roots reaching back years, decades, or even centuries. TryEngineering.org links to an interactive game called "Invention Connection" that challenges users to trace back some of these paths of invention. See if you can find the shortest path through inventions that link the abacus to the microwave oven!

A related activity in the Invention Connection game challenges users to pick the earlier invention in a pair of inventions such as the stapler or the paper clip. There are four rounds of "Which Came First?" in all -- each round has five questions, and each correct answer is worth 10 points. See if you can make the right choice between photocopying and the fax, rayon and nylon, or radar and sonar.

For the link to "Invention Connection" and other engineering games, click on "Play Games!" at www.tryengineering.org.



Enertia Building System Honored

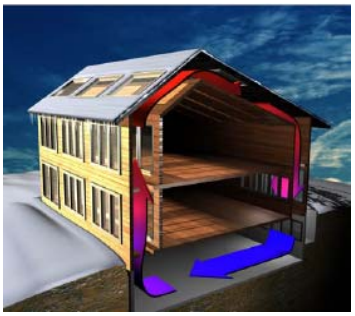
The "Enertia Building System" has been named the Top Invention of 2007 in the second annual Modern Marvels Invent Now Challenge, a competition in search of America's next great inventor.

The Enertia Building System uses a patented process to increase the latent heat storage capabilities of wood materials. The system also uses milled wooden blocks to eliminate the many materials and labor -intensive steps of house wall construction, replacing them with simple screwed-into-place units. The result is an attractive house of renewable material that heats and cools itself with free, natural clean energy.

Each Enertia house is built with a small atmosphere between the walls and is connected to a sunspace. The glue-laminated wooden structure stores solar and geothermal energy in its cellulose, lignin and resin, which is seeded with mineral crystals to initiate phase change.

Over time the thermal energy is released to heat the home. During the summer the process is reversed, and the wooden structure absorbs heat from the appliances and occupants throughout the day, dissipating it at night.

The system was developed by Michael Sykes, Enertia founder and owner. Find out more about the system and the awards at www.enertia.com.



The Enertia envelop in action.
Image Credit:
Enertia Building Systems, Inc.

TryEngineering Today!

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TryEngineering.org

is a resource for students (ages 8-18), their parents, their teachers and their school counselors. It is a portal about engineering and engineering careers, developed to help young people understand better what engineering means, and how an engineering career can be made part of their future.

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