

# HEEDS TECHNOTES

AN INSIDE LOOK AT ENGINEERING DESIGN TOOLS, TRENDS AND TECHNOLOGY

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## Now Available! HEEDS Professional 5.3

Release Announcement

The newest release of HEEDS Professional introduces important features and improvements for users, including:

- New LS-DYNA Output Portal
- Improved Abaqus Output Portal
- Improved Multi-Processor Design (MPD) performance
- Improved interface to Moldflow
- Direct interface to Microsoft HPC Cluster Scheduler
- Digital data filters for response definitions
- Automatic backup of models from previous versions

*\*Note: Upgrading to version 5.3 is free for customers with active HEEDS Professional licenses. Please contact us if you have any questions.*

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## Optimization of Light Armored Vehicle Plates under Blast Loading Conditions

Application Brief



In this application brief, we demonstrate how design optimization can be used in designing an armored plate for the undercarriage of an LAV.

A validated loading model for simulating blast mine effects was utilized in this study. LS-DYNA was used to simulate the dynamic blast response, and HEEDS Professional was used to perform the automated optimization in

order to design a sufficiently light, armored plate with an optimal material and thickness that minimized intrusion into the vehicle.

[Read the application brief](#)

## Optimization of a Hybrid Electric Bus

Application Brief

Interfacing with ADVISOR as a simulation tool, HEEDS Professional successfully optimized the design of a hybrid electric bus, resulting in a significant improvement in average fuel economy over the conventional version of the bus.



[Read the application brief](#)

## Red Cedar Launches a New Web Site

Announcement

As part of our 10-year anniversary celebration, the Red Cedar Technology Web site has been completely redesigned.

The new site offers vastly improved functionality and many new resources for our customers and visitors.



We hope you'll take a few moments to explore the new site. And check back often, because more new features and resources are coming soon!

[Visit our new site](#)

## Recent Publications Featuring HEEDS

Technical Papers

HEEDS Professional was used in the following recently published optimization studies:

### Design optimization of progressively crushing rails

N. Chase, R.C. Averill, and R. Sidhu  
*SAE World Congress and Exhibition*, April 2009

[Read the abstract](#)

### Optimization methods for the tube hydroforming process applied to advanced high-strength steels with experimental verification

N. Abedrabbo, M. Worswick, R. Mayer, and I. van Riemsdijk  
*Journal of Materials Processing Technology*, Volume 209, Issue 1, 1 January 2009, pp. 110-123.

[Read the abstract](#)

### Ligament property optimization within a virtual biomechanical knee

J. Bischoff, E. Siggelkow, D. Sieber, M. Kersch, H. Ploeg, and M. Münchinger  
*Proceedings of the ASME Summer Bioengineering Conference (SBC2008)*.

[Download the paper](#)

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As always, we hope you have found this issue informative and interesting. If you have questions or feedback, please don't hesitate to contact us.

Sincerely,  
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