FINITE ELEMENT ANALYSIS FOR MACHINE DESIGN

We perform simulation, evaluation and optimisation with finite element software systems based on the 3D CAD model created by machine designers and product designers, recommend design aspects, ideas and solutions for designers for improvements to make more competitive and safer tools.

COMPETENCIES

- Performing finite element simulations and evaluations
- Optimisation of a product, machine element or unit in terms of different objective functions (maximum load capacity, minimum own weight, minimum amount of material used, minimum production cost)
- Complex dynamic studies (spectrum analysis, harmonic analysis, random vibrations, balancing, machine foundation)

SERVICES

- Product simulation, finite element analysis, control, and further development
- Product optimisation
- Teaching finite element program systems
- Programming and teaching finite element program systems

TOOLS

- ANSYS Workbench finite element program system
- Solid Edge 3D design software
- Computer lab with 12 workstations

REFERENCES

- Optimisation of automotive electronics unit panels for minimum specific deformation to minimise the amount of waste generated during control measurements at BOSCH's Hatvan plant
- Investigation of gas burner deformation and stress under operating pressure and temperature for TÜKI Miskolc
- Vibration and balance tests of an car air conditioning fan for BOSCH in Miskolc
- Investigation of bevel gears and angular defects in order to further develop an engine for Rába Axle Ltd.

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