

Virtual printing a knowledge based design method

Marco Ezendam
Reden B.V.

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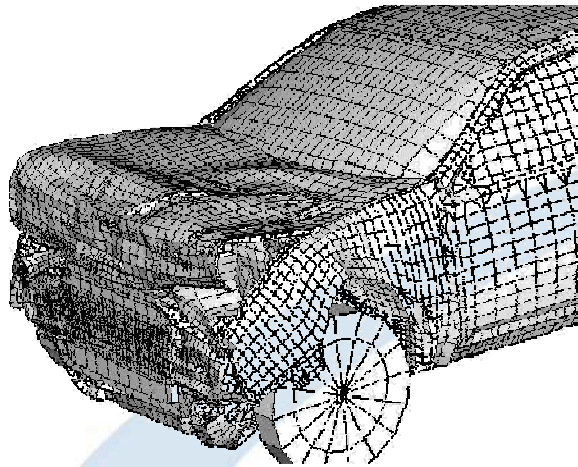
Contents:

- Introducing Reden
- Concept of virtual printing
- Transport belt
- Droplet flight and impact
- Interaction between ink and fabric

Introducing Reden



Reden is an abbreviation for: **R**esearch & **D**evelopment **N**ederland

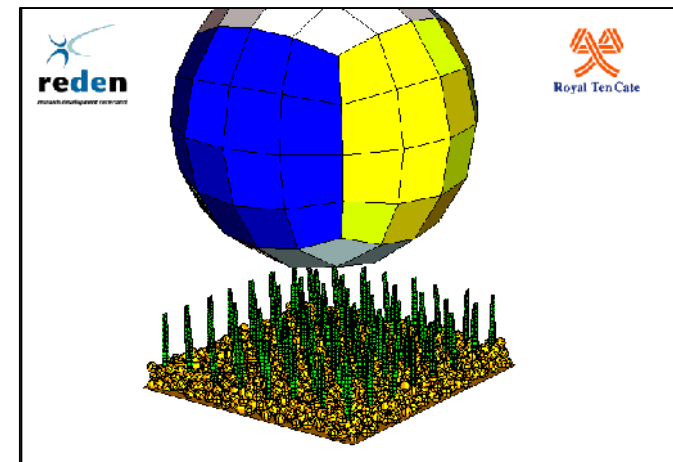


Mission:

Initiate a break-through in product development for our customers.

Method:

Providing profound insights for the product developers using validated simulation models of the product and/or the production process.

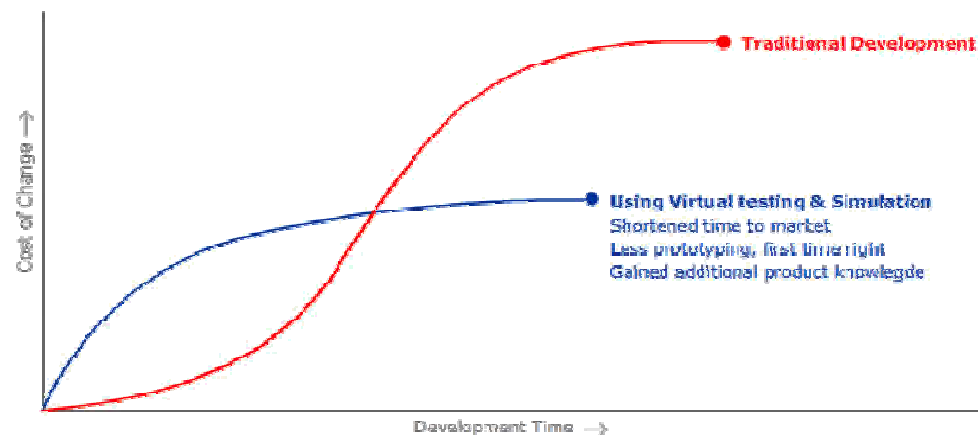


Introducing Reden

What is the benefit of modelling and simulation?



1. The aims in product development are achieved more often
2. Break-through in results, through-put and predictability of the designs
3. Newly developed knowledge is secured in models and design rules
4. Early-stage developments by means of virtual testing result in cost reduction on long term base (*fewer experiments, less prototyping, first-time-right products*)



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In which domain?



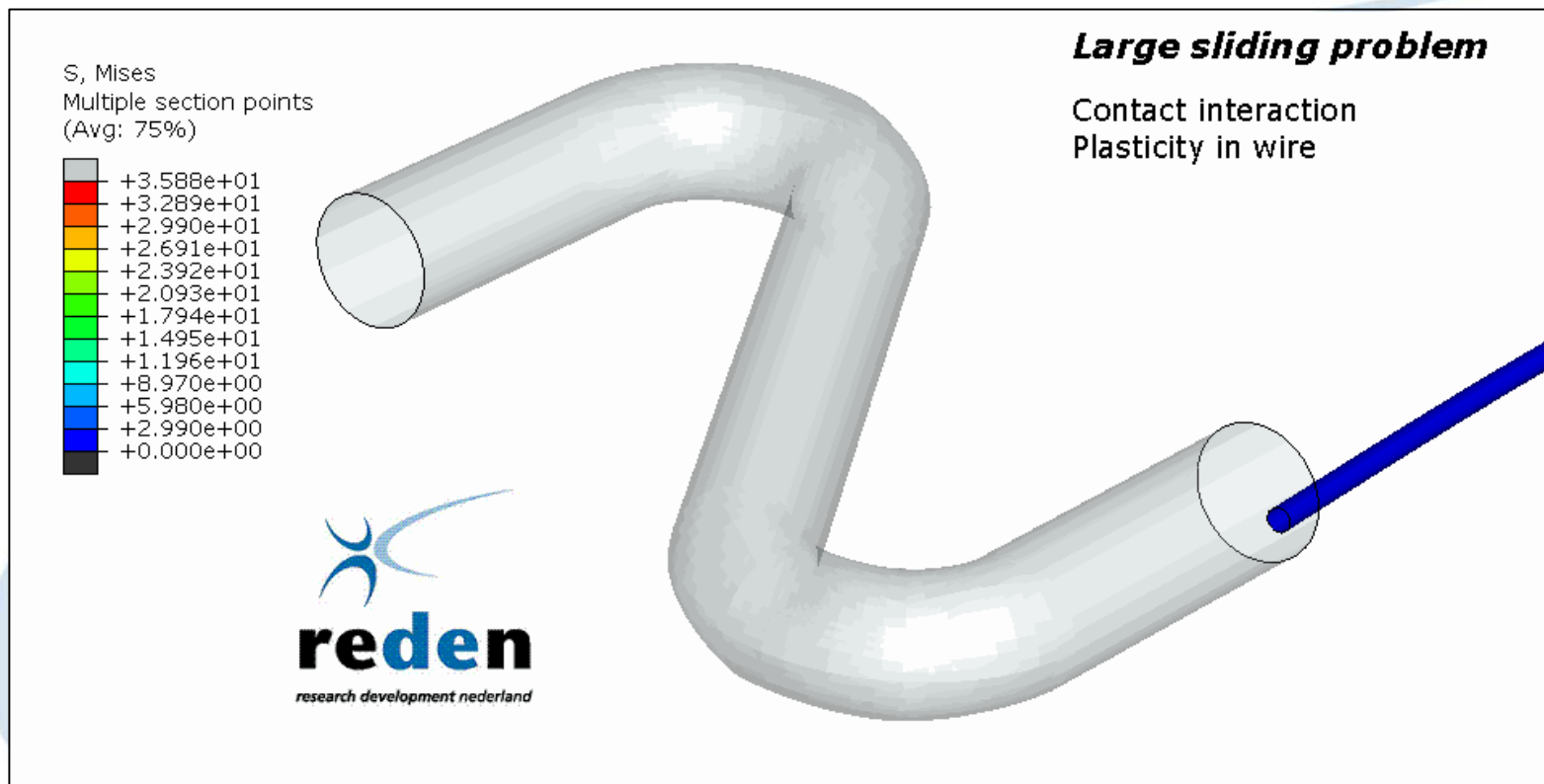
We excel in the domain of physical products and systems, in which is found:

- Large complexity
- High demands on performance
- Multi physics*, with the focus on Applied Mechanics
(*multiple subject simultaneously: construction science, mechanics, thermodynamics, acoustics, material science, vibrations, electromagnetism, etc.)

Existing engineering's package do not provide a (standard) solution for these problems.

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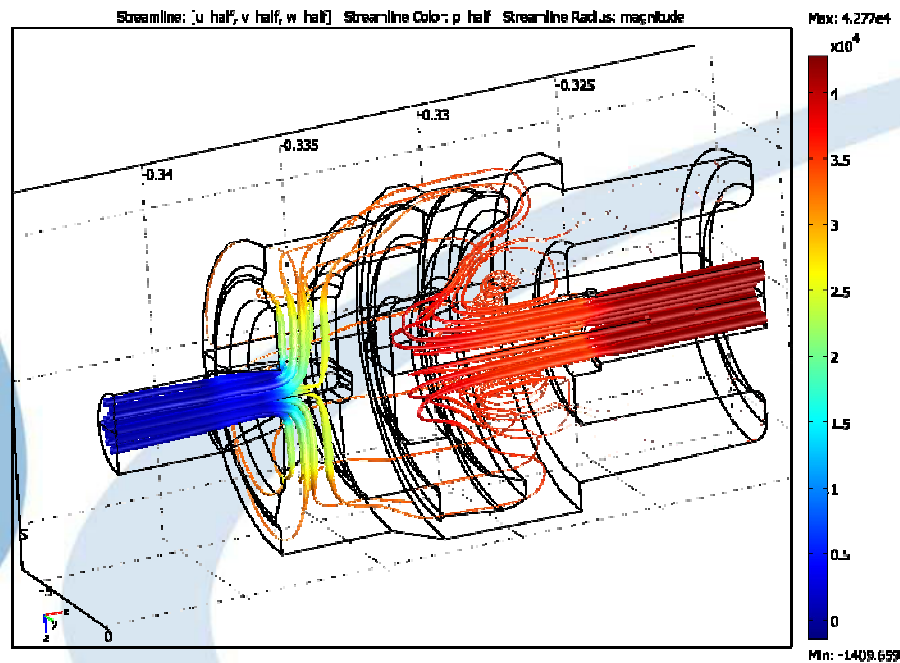
Examples (1)



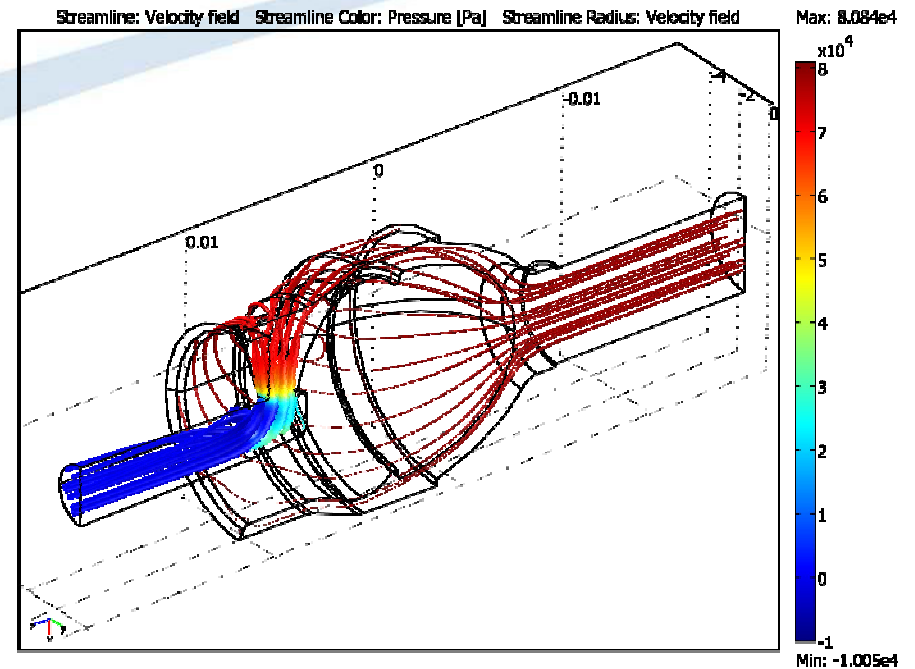
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Examples (2)

Flow analysis with Comsol



Original

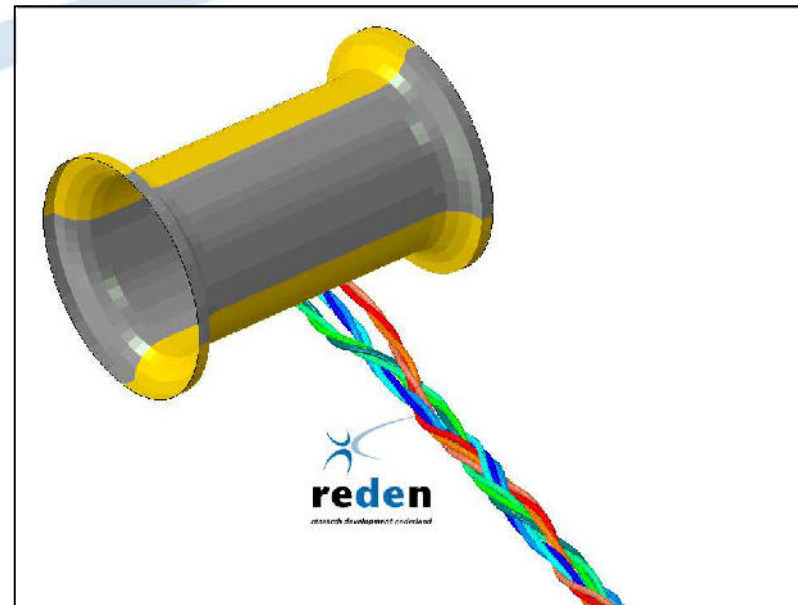
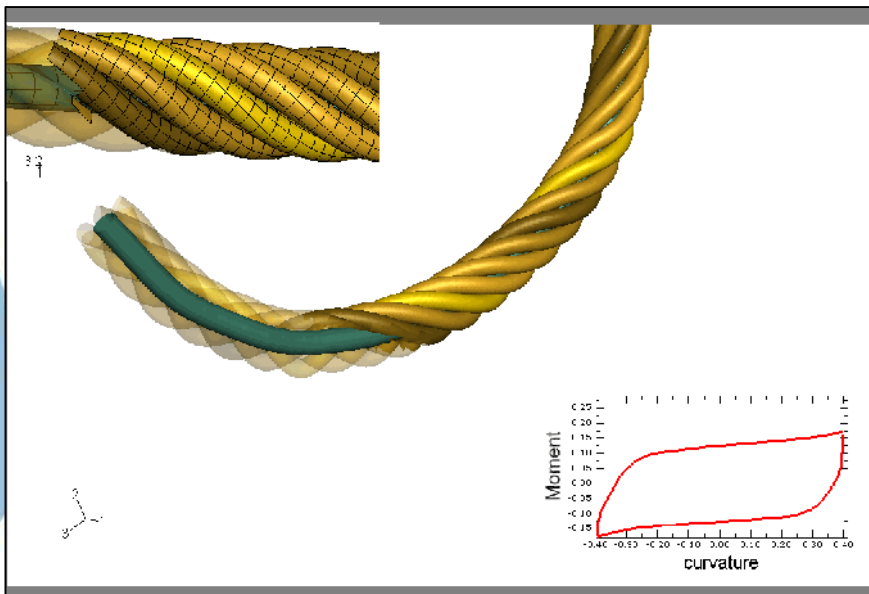


New design

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Examples (3)

Rope and cable modelling:



Concept of virtual printing

Benefits of printing technology

Printing technology gives us new tools to develop new products

- Accurate droplet deposition
- Control the amount of ink
- Ink properties