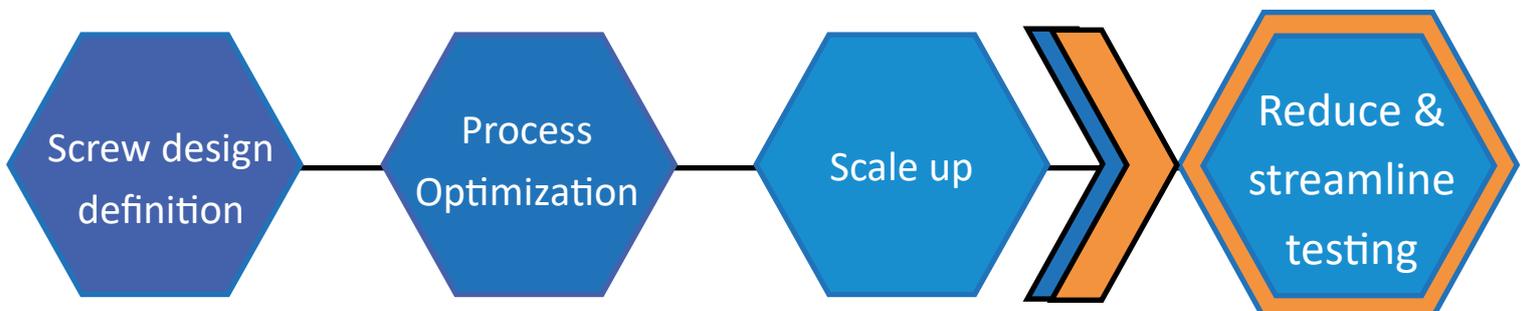# SCIENCES COMPUTERS CONSULTANTS

Ludovic®
The TSE digital twin

Ludovic® is a digital twin-software designed for optimizing the **corotating Twin Screw Extrusion (TSE)** process.

With Ludovic® v7.1, get all the key figures about your process and product evolution, for :

| Screw design definition | Process Optimization | Scale up | Reduce & streamline testing |

Replace **trial & error** with numerical simulation to save **time & money**
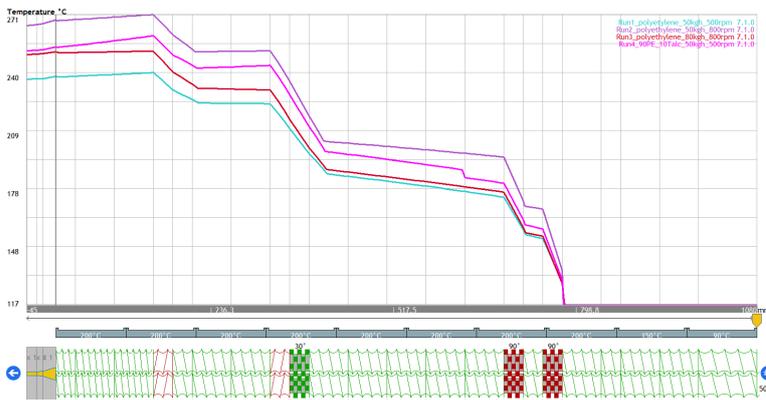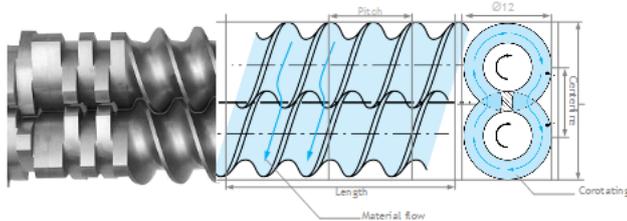
Process efficiency at the finger tips

Ludovic® is a numerical simulation software and analyzes process and mixing efficiency to provide immediate answers : computation time is only 10s.

Opening the black-box

Process trends are analyzed, with key values such as torque, RTD and SME/ With Ludovic, easily compare configurations for determining the optimal functioning point.
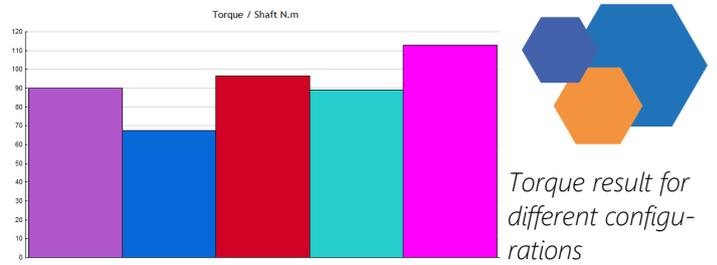
Scale Up

The automatic Design of Exeperiments tool targets the key characteristics for achieving a successful scale up (temperature profile, max torque, min. SME...)
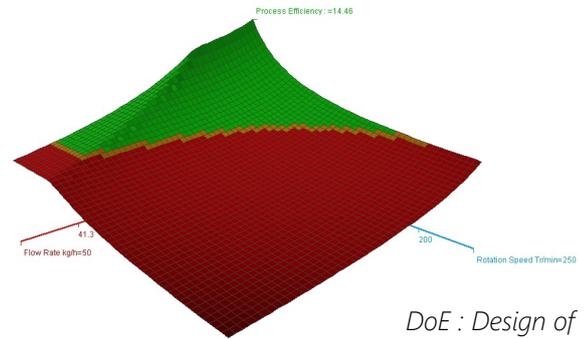

Torque result for different configurations

DoE : Design of Experiment result

Material evolution

On the other hand, Ludovic® computes the material behaviour evolution all along the process and translate the whole material thermo-mechanical history.

Impact of design/process

Define the twin screw characteristics, screw design and operating conditions to figure out their impact on the material evolution

Local analysis

Local results are displayed along the screw profile for giving accurate data (temperature melt profile, pressure profile, shear vs.viscosity and many more).

On the left : Temperature distribution along the screw profile for different screw designs

Flexible licenses

Ludovic® software holds different modules, accessible with tokens for a simultaneous use.

Access / license	Single	Group	Enterprise	Corporate
Ludovic® GUI	1	5	7	10
Ludovic® Computation	1	2	3	5
Ludovic® Identify	1	4	5	8

- ♦ GUI for the interface and the preparation/post process of simulations
- ♦ Computation for running the solver (computations)
- ♦ Identify : a specific module aimed at the product rheology adjustment

Developed with : **Cemef** CENTRE DE MISE EN FORME DES MATERIAUX **INRA@**

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