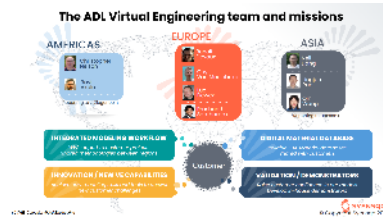


ADL Virtual Engineering



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Injection molding	flow, spiral flow, imbalanced flow, weld line, pressure, shrinkage/warpage, porosity, buckling, fiber orientation (anisotropy, model parameters, ...), thermal hesitation, mold cooling, validation approach, moldflow&moldex, undercut demolding, thin parts, PVT data, inductive heating (Roctool), micro-injection molding, compressibility effect on pressure prediction, ...
Insert overmolding	Thermal shock, core shift, 2K molding (workflow), "adhesion" and tightness (TP on TP, TP on metal), heating (Joule effect), residual stresses, warpage, thermal conductivity and thermal expansion, ...
Reactive molding (injection, compression, capillary underfill)	Epoxy Molding Compound (semi-conductors), reactive injection molding applied to Tecnoflon, reactive compression molding applied to Tecnoflon, overview of MOLDFLOW capabilities for Capillary Underfill (CUF) using thermoset resin ...
Electrical	PDIV, EMI, Slot liners in e-motors, piezoelectricity (macroscopic), dielectric constant of CF/GF compounds (+moisture), dielectric constant and loss factor for bilayered structures, Joule heating, skin&proximity effect in busbars, electro-corrosion in bearings...
Fluid dynamics (CFD)	introduction, electrostatic spray coating, polymer extrusion of Solef (rheological model&validation), visco-elasticity (melt), melt spinning line (BLT), ...
Thermal	simulation capabilities, conductivity with special fillers, thermal conductivity and thermal expansion, ...
NVH	visco-elasticity, vibration, acoustic, Model identification, Non material damping
High speed (Impact...)	model identification & validation
Short-term (mechanical) predictions	stiffness and strength, water-freezing, intrinsic stiffness of compounds
Long-term (mechanical) predictions	creep, fatigue
Mechanical instability (buckling)	pipe reeling (buckling/permanent deformation), liner collapsing, slot liner insertion, ...
Anisotropic prediction for fiber reinforced polymers (Digimat)	digimat suites, anisotropy, the different models we have and the related characterization tests, database, model identification (TEP), introduction of a weld line strength knock down factor, validation, application to really thin parts, use of flakes/platelets applied to Kalix 7650, tension-compression differentiation for plasticity (Drucker-Prager), ...
Long fibers thermoplastics	mechanical behavior (calibration, validation) and in-mold fiber breakage analysis in MOLDFLOW (sensitivity study), ...
Single-screw modeling (extrusion)	flows in a single screw extruder (basics), capabilities of Compuplast, ...
3D print	FFF
Gas permeability	of multi-layer structures (CheFem), ...
Topology optimization	example with validation
Friction & wear	very limited contribution (so far)

Systems	Gears, compressors, small implantable screws, μ -needles insertion in human skin, e-motors, EV charging plugs, generic M2P support, sub-modeling approach applied to electrolyzer frames, ...
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