JMatPro
PRACTICAL SOFTWARE FOR MATERIALS PROPERTIES

API VERSION 7.0 – December 2021
API VERSION 7.1 0 June 2022

VERSION 7.1 (June 2022)

- Extended Mechanical module with the calculation of tempered hardness for general steels
- Improved Cu effect in the mechanical properties of aluminium alloys
- Improved assessment of kinetics for some phases of aluminium alloys
- Completed and corrected physical properties for TIM_B2 phase of titanium alloys
- Fixed Solidification calculations for aluminium alloys containing oxygen
- Fixed a possible issue affecting Cooling calculations
- Added full Python wrapper and sample code for all available modules

VERSION 7.0 (December 2021)

- Improved quench from Scheil-Gulliver solidification model for steels to deal with cases where austenite only appears in the solid state
- Reassessed yield strength <-> tensile strength <-> hardness interconversions for steels
- Extended Mechanical module for aluminium alloys, including the calculation of room-temperature and high-temperature strength, as well as flow stress and age hardening curves
- Remodelled contribution of particles at grain boundaries to rupture life in Ni alloys
- Improved calculation of the elastic limit (point of the stress-strain curve at 0 strain)
- Moved jmpSetQuenchRate() to the Core module
- Added function to toggle elastic region in flow stress curves on or off
- Changed the strain rate decade subdivision method used in high-temperature strength and flow stress calculations to produce nicer values
- Updated the thermodynamic and properties databases to match those included in JMatPro® v13.0
- Added NIW and NI6SI2B phases to Ni thermodynamic database
- Adjusted MC phase in Ni and Co thermodynamic databases
- Added AL12MO phase to Al thermodynamic database
- Added CLUSTER metastable phase to Al thermodynamic database
- Adjusted MGRE12 phase in Mg thermodynamic database
- Reassessed thermal conductivity contribution for Cu and Si in FCC phase
- Reassessed thermal conductivity for magnesium alloys with significant Al content
- Fixed bug in Cooling calculations occurring with some user-defined profiles
- Fixed mismatching problems in Solidification calculations using the quench from Scheil-Gulliver model for steels or white cast irons with out-of-step austenitisation temperatures
- Fixed missing reset in Solidification calculations using the quench from Scheil-Gulliver model for steels, which could lead to wrong behaviour for ferritic steels