Benefits

- Accelerates material qualification & reduces testing costs
- Predicts long-term performance under multiple stressors
- Enhances confidence in product reliability
- Enables virtual prototyping of new formulations
- Supports cross-industry compliance and standards

K-Suit empowers engineers to make faster, data-driven decisions on material performance. By combining physics-based simulations with AI-driven predictions, our software reduces the need for extended testing while delivering accurate forecasts of material degradation and failure.

Explore more at
https://www.karax.us/k-load

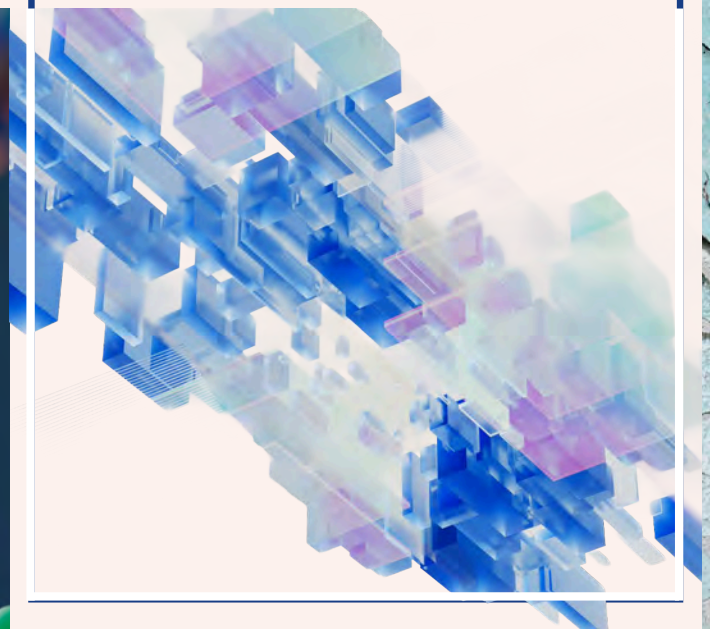
About K-Suit

K-Suit is Karax's advanced platform for simulating the aging, reliability, and failure of polymeric materials. It models environmental stressors such as:

- Thermal Aging, thermal cycling
- UV, water, and moisture ingress
- Ionizing Radiation, Gamma, X-ray
- UV, electron, proton
- Chemical exposure, HPHT
- Mechanical vibration, Overloads and Fatigue

Through digital twinning, K-Suit allows companies to predict lifespan, optimize formulations, and evaluate materials for extreme environments — from chemical & pharma industries to automotive, aerospace and electronics.

Order Trial Version
Email us at contact@karax.us



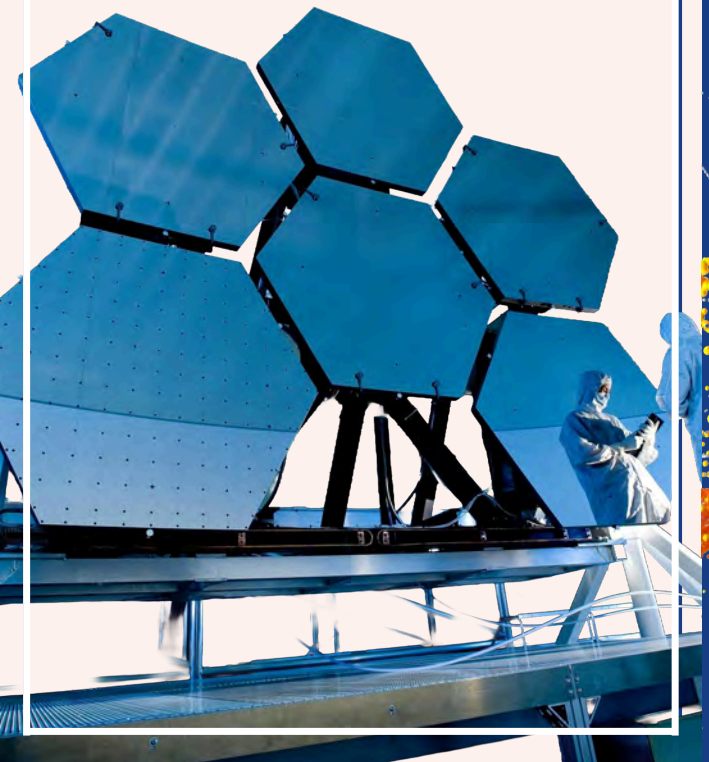
K-Suit Software
Deep-Learned
Digital Twins for
Polymeric Materials

Predict. Simulate. Optimize

Deep-Learned
Digital Twins for
Polymeric Materials

Applications

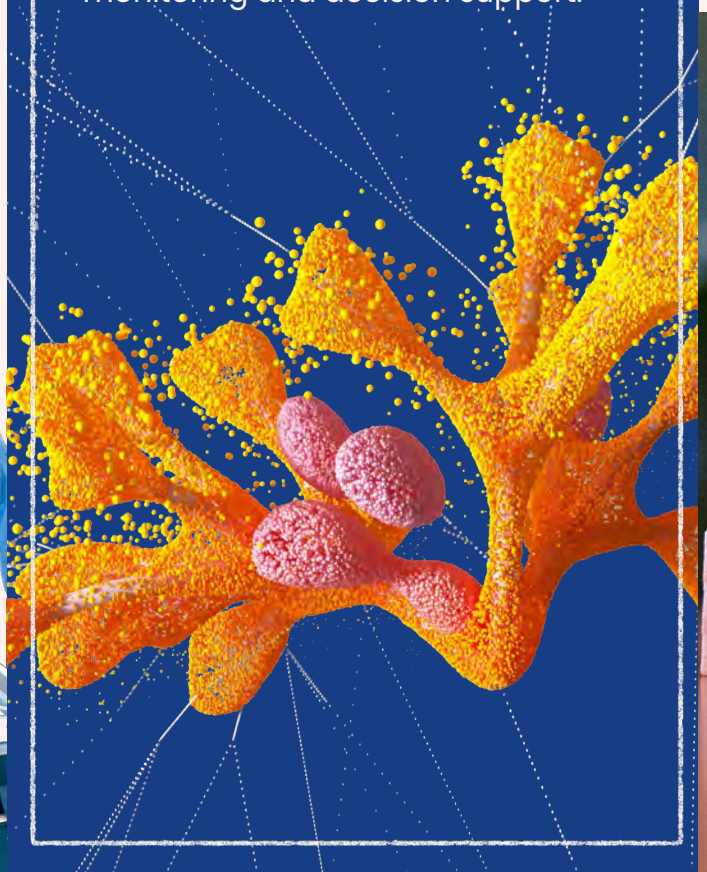
Aerospace & Defense: Radiation shielding, thermal cycling, extreme environments.
Automotive & Energy: Vibration, thermal, and chemical resistance under service.
Pharma & Medical Packaging: Predict sterilization and shelf-life degradation.
Oil & Gas: Polymer liners, seals, coatings exposed to harsh chemicals in HPHT.
Chemical Industry: Long-term stability of elastomers, coatings, and adhesives.
Chip & Micro-electronics: Reliability of polymer encapsulates, coatings, and under-fills in high-radiation, high-heat, and long-life devices.



From Test to Digital Twins

Every problem we solve follows four stages of cooperative development:

- **Experiment:** Initial lab or field testing of your polymer system under relevant stressors.
- **Data Processing:** Cleaning, analyzing, and extracting key features from your experimental dataset.
- **Digital Twinning:** Building a predictive model using physics-based and machine-learned methods.
- **API Release:** Integrating K-Suit into the host software ecosystem for condition monitoring and decision support.



Data & Access

Data Needs for Training: Only minimal but high-quality material performance data is required for initial calibration. We focus on non-sensitive parameters such as material response curves, degradation metrics, or normalized performance values.
Data Security: Proprietary or confidential formulation details are not required.
Individualized Trial Software: We offer individualized demonstration module, tailored to your material system, with restricted access for evaluation. This ensures that you can directly assess predictive accuracy and relevance to your use case before scaling.