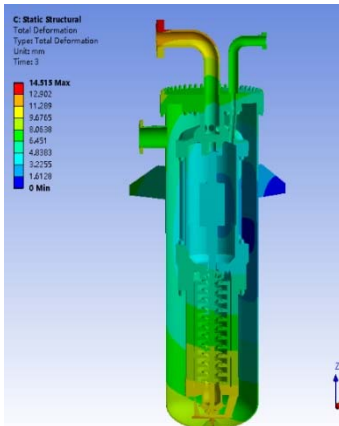


## 研发中心案例研究分享 R&D CASE STUDY BRIEFING

### 先进的有限元分析技术保证产品设计可靠性 Advanced Finite Element Analysis Technique Ensures the Reliability of Product Design

IPT 拥有对泵产品进行结构应力、变形及疲劳寿命综合评估的核心技术。采用先进的有限元分析与试验技术，保障产品长期安全可靠运行 IPT has the core technology of professional comprehensive evaluation of stress, deformation and fatigue life. The use of advanced finite element analysis technology and test technology to ensure long-term safe and reliable operation of products.

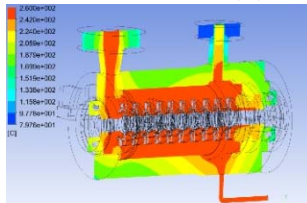


大型有限元法结构分析 Large Size FEM (Finite Element Method) Structural Analysis



应力应变测试设备

Stress and Strain Tests Equipment



整机温度分布

Temperature Distribution of Pump

#### 客户需求 Voice of Customer

- 产品运行安全可靠 Safe and reliable operation of the product
- 低振动、低噪音和长使用寿命 Low vibration, low noise, and long service life

#### 核心技术 Core Technology

- 通过采用有限元分析和试验技术来评估产品机械完整性，保障产品安全可靠运行 Product mechanical integrity is evaluated by finite element analysis and test technology to ensure safe and reliable operation of products
- 采用热-结构耦合、流-固耦合等分析技术，同时考虑材料非线性、接触非线性等非线性分析方法，保证分析结果的准确性和可靠性 The analysis techniques such as heat-structure coupling and fluid-solid coupling are adopted, and the nonlinear methods such as material nonlinearity and contact nonlinearity are considered to ensure the accuracy and reliability of analysis results
- 仿真分析极端工况下产品可能存在的问题和风险，降低试验成本并在设计阶段保证产品安全可靠 The simulation analyzes the problems and risks that may exist in the extreme operation conditions of the product, reduces test costs and ensure product safety and reliability during the design phase.
- 专业的应力应变测试技术(包括承压件应力测量和残余应力测量等)，保证实际产品结构强度可靠 Professional stress and strain testing technology(including stress measurement of bearing parts and residual stress measurement) to ensure the reliability of actual structure strength.

#### 客户收益 Customer benefits

- 产品可靠性满足客户需求 Reliable product performance meeting customer needs
- 产品长使用寿命并且低振动 Long products service life with low vibration
- 产品能在极端条件下稳定运行 Products that can stably operate under extreme conditions

#### 适用的产品 Applicable products

全部产品 All Products

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