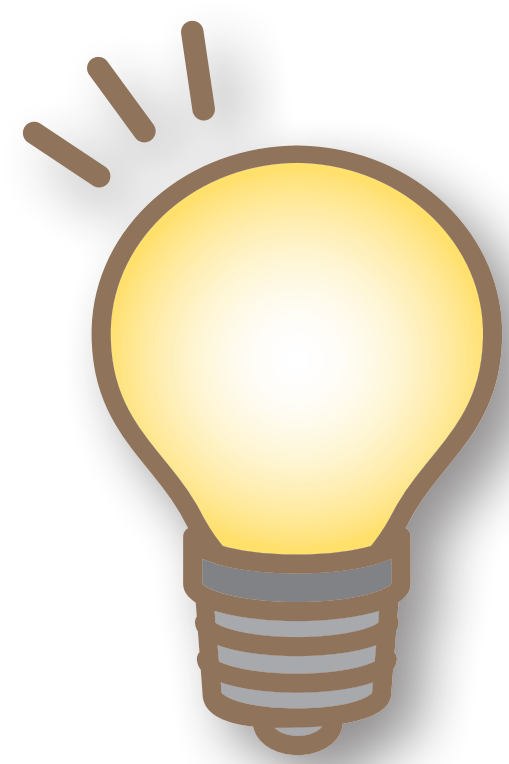


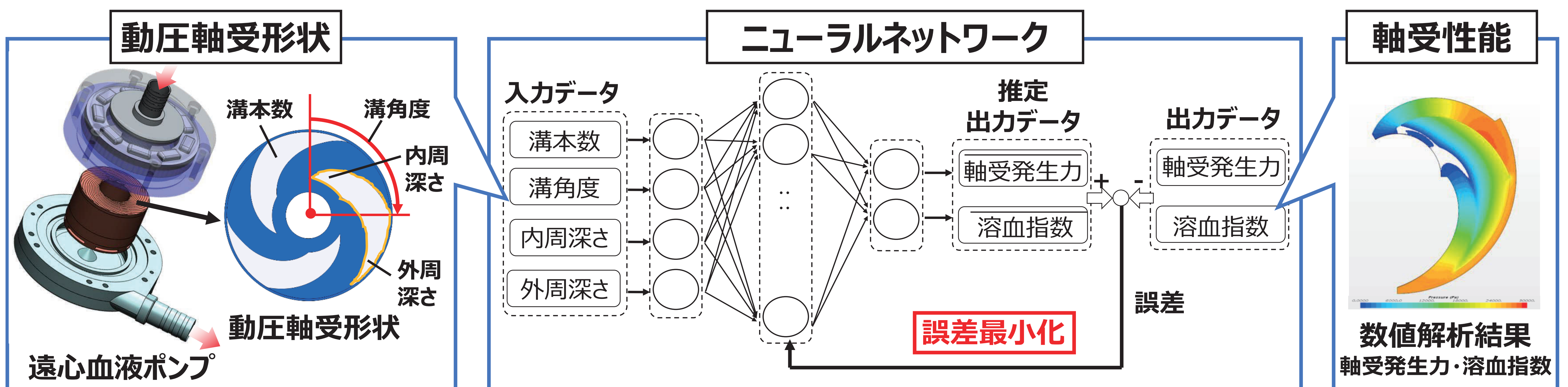
AIを用いた動圧浮上遠心血液ポンプの最適設計法の開発

Geometric optimization of a hydrodynamic bearing for a blood pump using AI

人工知能 (AI) を用いて医療機器の最適設計を効率良く実現 Design optimization of medical devices using artificial intelligence (AI)

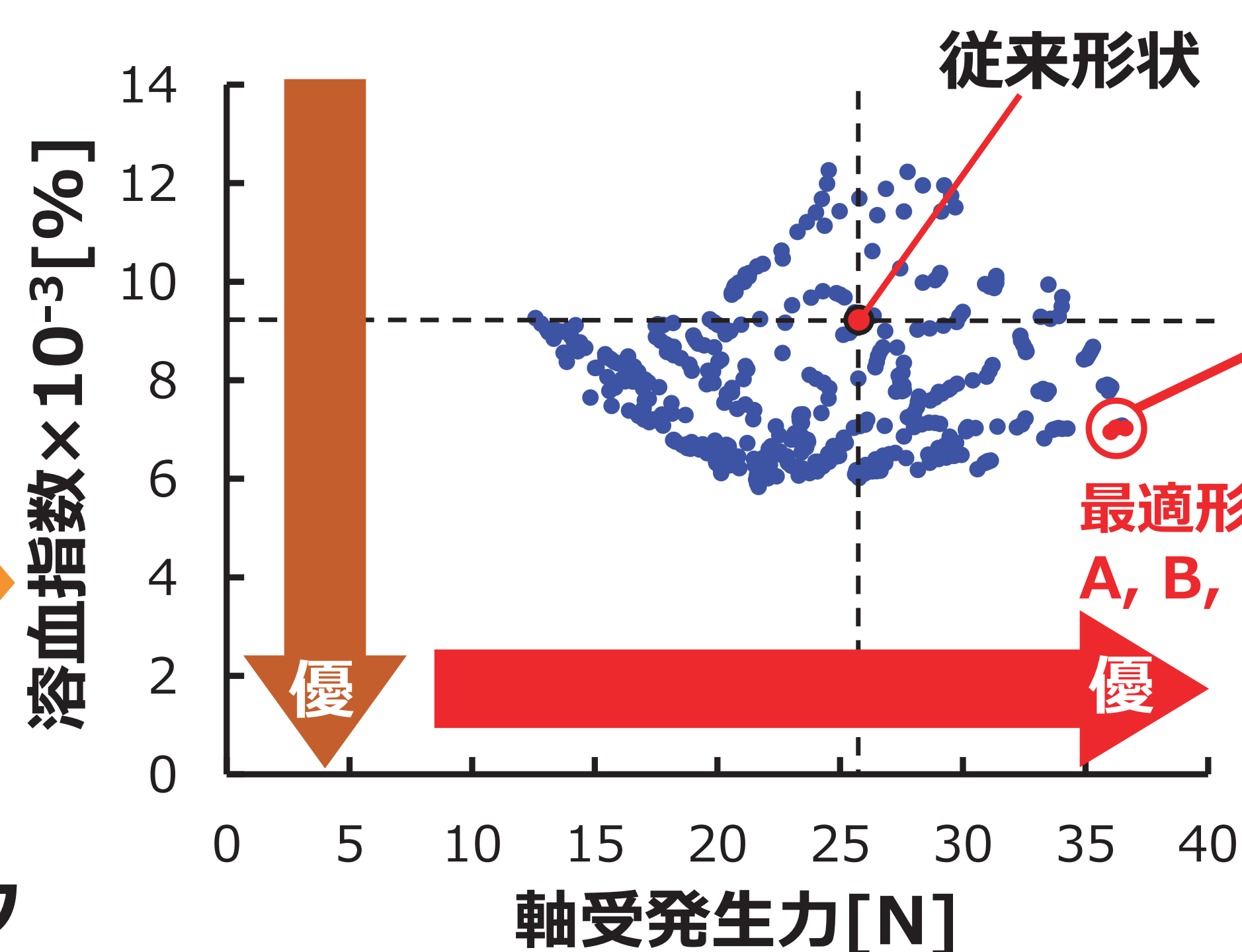
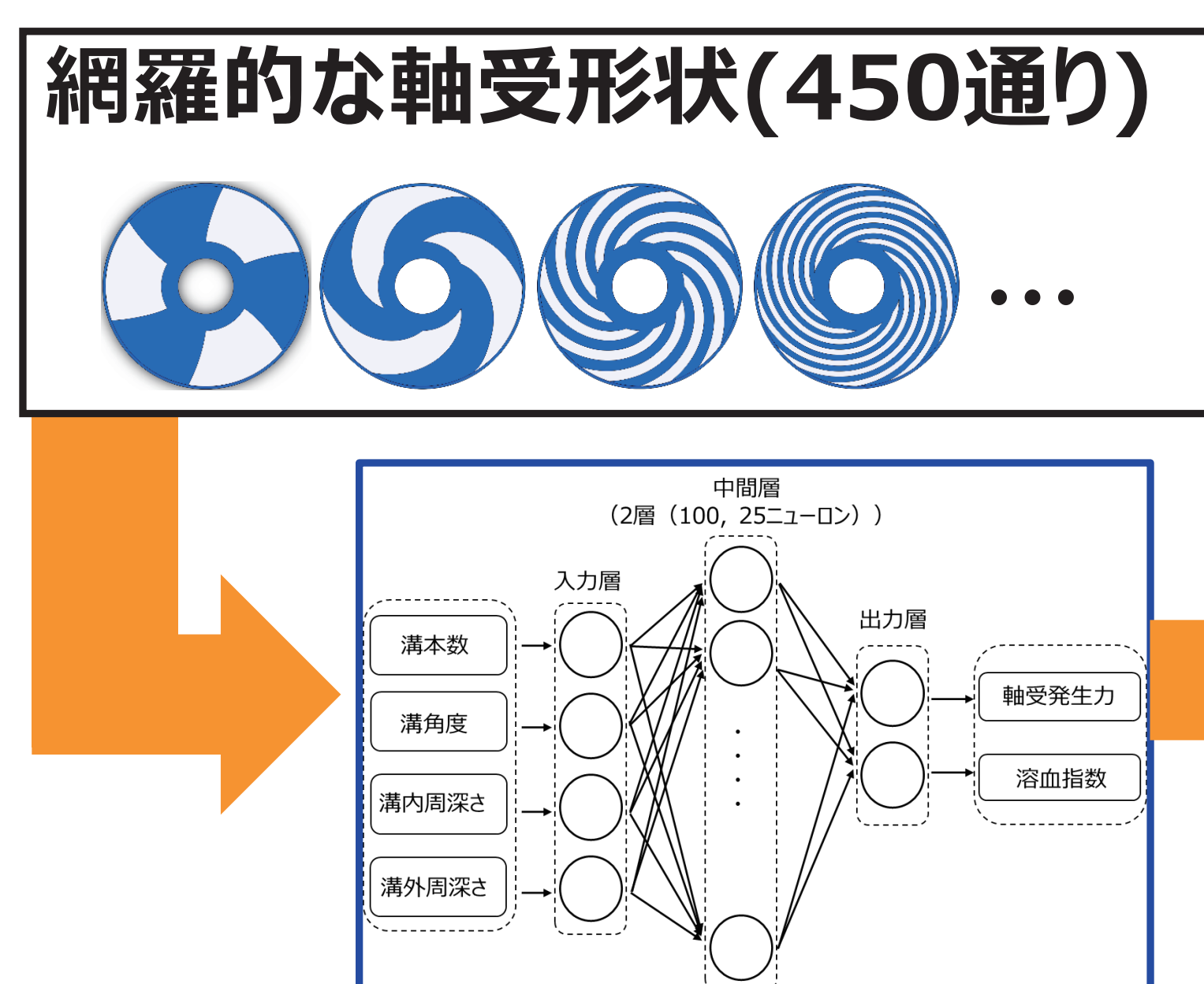


- ▶ **医療機器開発のDX化と超効率化**
Implementing digital transformation and efficiency in medical device development
- ▶ **動圧ポンプの軸受発生力の最大化と赤血球破壊の最小化の相反する目的を実現**
Geometric optimization that achieves the conflicting objectives of hydrodynamic pumps
- ▶ **AIによる最適設計により過去の経験則を超えた形状の最適化**
Achieving optimal geometry exceeding past experience



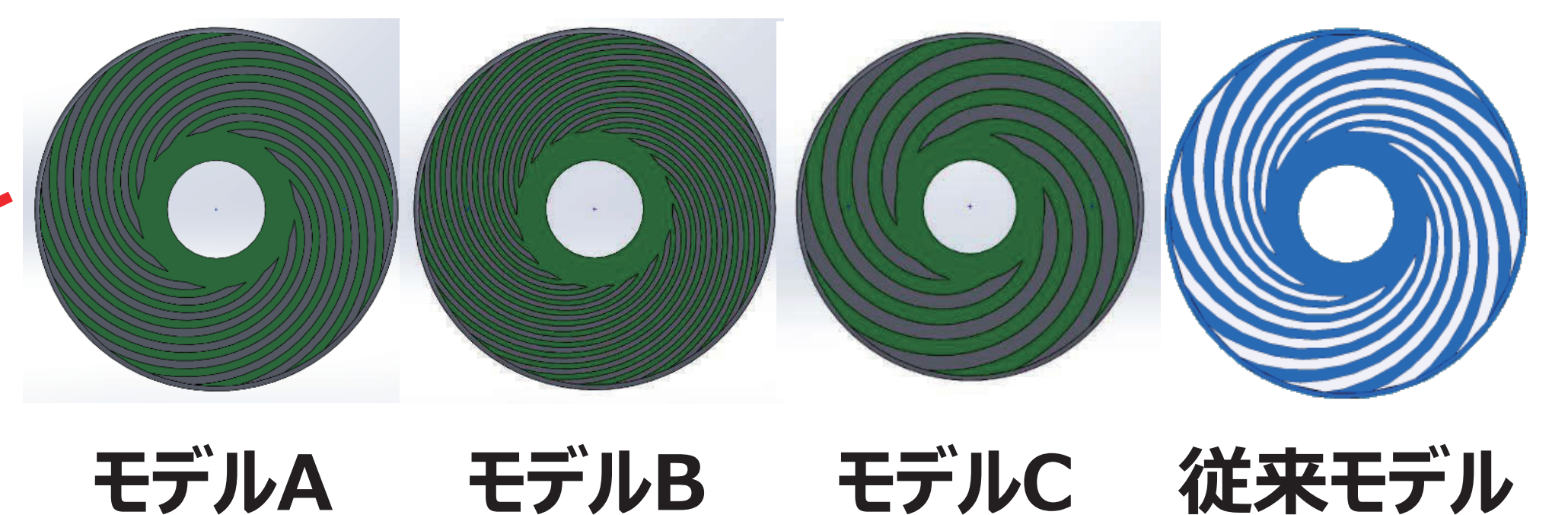
ニューラルネットワークを用いた動圧軸受の形状最適化の結果 Results of geometric optimization of a hydrodynamic bearing using AI

動圧軸受の最適形状の探索



動圧軸受の最適形状

溶血指数が小さく、軸受発生力大きいモデル



従来モデルに比べて、軸受発生力40%、溶血指数30%改善

動圧軸受の形状から軸受性能の結果が推定可能なニューラルネットワークの構築 Construction of a neural network for estimating a hydrodynamic bearing performance