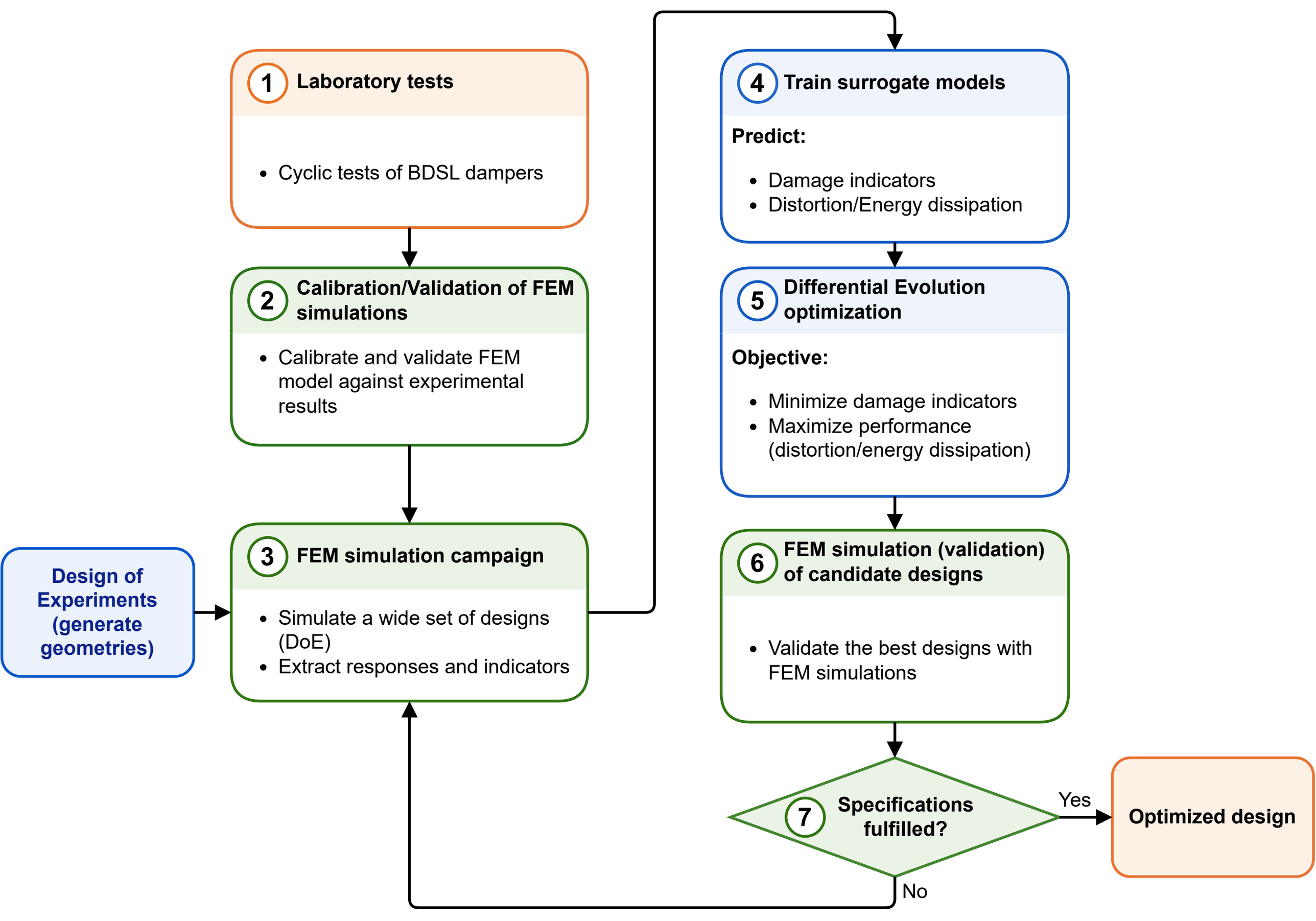
1 Laboratory tests
• Cyclic tests of BDSL dampers
2 Calibration/Validation of FEM simulations
• Calibrate and validate FEM model against experimental results
Design of Experiments (generate geometries)
3 FEM simulation campaign
• Simulate a wide set of designs (DoE)
• Extract responses and indicators
4 Train surrogate models
Predict:
• Damage indicators
• Distortion/Energy dissipation
5 Differential Evolution optimization
Objective:
• Minimize damage indicators
• Maximize performance (distortion/energy dissipation)
6 FEM simulation (validation) of candidate designs
• Validate the best designs with FEM simulations
7 Specifications fulfilled?
Yes
No
Optimized design