



ACS COLLEGE OF ENGINEERING

1. Stage Aerodynamics (Physics)

Reynolds Number (Re) 300000

Inlet Flow Angle (Alpha) [deg] 7.00

Stage Solidity (Sigma) 1.20

2. Blade Geometry (Mechanical)

Blade Height (Span) [cm] 8.00

Root Chord [cm] 6.00

Tip Chord [cm] 5.00

Twist Angle [deg] 30

3. Optimizer Settings

GA Generations 20

Population Size

Department of Aerospace
Engineering

Project - Compressor Blade Design Optimization using Artificial Intelligence

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System Architecture: Nested Surrogate Optimization Framework. This tool designs **High-Pressure Compressor (HPC) Rotor Blades** by optimizing aerodynamic efficiency (L/D) while accounting for cascade interference effects (Solidity).

AI Surrogate Model Ready

RUN OPTIMIZATION & GENERATE GEOMETRY