

ACO limitations → ① use more parameters

ACO advantage → ① provide better solution with fewer iterations.

05 sep -

Optimization problem solved by [ACO]

① structural design problem ⇒ bin

② manufacturing problem

③ Power system problem

④ water resource problem

⑤ Chemical engineering problem.

[ACO] → structural engineering problem

① Truss design → minimize weight of a

truss while satisfying constraints on its strength and stiffness.

② Beam Design → minimize the weight

of a beam while satisfying constraints on its deflection and stress.

③ Plate Design → minimize deflection and stress.



④ Foundation Design → minimizing the cost of a foundation while satisfying constraints on its bearing capacity and settlement.

⑤ Structural layout → finding out the optimal layout of a structure, such as bridge.

⑥ Topology Optimization → finding the optimal shape and material distribution of a structure.

ACO final