

ANALYSIS OF COMPOSITE MATERIAL FOR WING OF AIRCRAFT

ALI SALH SAWADI

Assistant Lecturer, Najaf Technical Institute, Al-Furat Al-Awsat Technical University, Najaf, Iraq

ABSTRACT

Design of aircraft take in consideration Many factors like safety, efficiency, reliability, and comfort. However, the importance all of these aspects depend on the type of the aircraft where the designed can vary from fighter to commercial airplanes.

As a result, the design of aircraft has to meet with requirements that effect on the materials used in its construction and complexity of its structure. Many from materials can be used in the design of the aircraft to get good properties such as, elasticity, strength, weight, specific, and corrosion resistance.

Also can be used Different materials in the design the parts of the aircraft, as a function of the initial requirements of the strength -to -weight ratio and the preferential directions of the applied loads.

In this paper, the aircraft wing is modeled by 3D modeling software Pro/Engineer. The material that which used for aircraft wings is mostly metallic alloys. In this paper, the materials change by composite materials Carbon Fiber and Aramid Fiber.

Static analysis done to determine the stresses and strain and deformation produced by applying loads. Analysis done in Ansys.

KEYWORDS: Aircraft Wing, Composite Materials, Stress, Strain, Deformation