

UNIVERSITY OF TURKISH AERONAUTICAL ASSOCIATION
GRADUATE SCHOOL OF AERONAUTICS AND ASTRONAUTICS
AEROSPACE ENGINEERING PROGRAM

GRADUATE SEMINAR SERIES

ADHESIVELY BONDED TECHNIQUE ON COMPOSITE AIRCRAFT STRUCTURES

by

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Mechanical fasteners are the most preferred joining method in today's aviation industry. They play a key role in fastening parts made of all kinds of materials with each other. These fasteners are generally used on composite materials, which are preferred in the aviation industry. However, the use of fasteners on composite materials has disadvantages, especially for aircraft, UAVs, etc. The most critical of these is the extra weight that fasteners add to aircraft. Another is the discontinuity and aerodynamically rough surfaces caused by the drilling of holes on the composite material by the fasteners. Some different methods have been developed to minimize these effects. The most up-to-date and effective of these methods is the bonding method, also known as 'Adhesive'. These bonding techniques, which are gradually entering the aviation industry, have paved the way for the use of less fasteners. It has also paved the way for the aerodynamic surfaces of the aircraft to become smoother, minimizing the negative effects of the loads affecting the vehicle. With the tests and studies conducted, it is aimed that bonding techniques will replace fasteners or work together with fasteners effectively. The advantages and disadvantages of bonding techniques applied on composite materials will be discussed in this seminar. In addition, the historical development of composite materials and why they are the most suitable material for bonding processes will be explained.

Date: January 23, 2024 Tuesday

Time: 13:30

Location: 102 Amfi