

## **ELECTRIC AIRPLANE IS THE FUTURE OF CIVIL AVIATION**

In recent years of evolution, civil aviation has had a significant breakthrough both in technology and economics. The number of people who use air transport for traveling by air has been growing. This means that aircraft designers are increasingly publishing new concepts for future air transport, from aircraft on autopilot to air taxi. Currently, many of these projects are at the stage of development, refinement, research and testing, as well as the introduction of an economic implementation strategy. It is very important, because the slightest mistake can lead to the death of hundreds of people.

Criteria for successful development are practicality and efficiency. The ideal aircraft should have average dimensions and at the same time carry the maximum number of passengers.

Today, the introduction of electric vehicles as transatlantic transport has a number of significant limitations, ranging from low power electric motors to low battery capacity. But in the field of regional flights, the electric planes will be able to changing the pricing system for air travel, thereby taking the main and leading position. The main limitation is not even technical, but economic. For example, in Europe, a train can cross the country from one end to another for a few hours. But traveling by train (or by car too) costs cheaper. That is why in order to ensure that the electric planes are worthy of competition with other kinds of transport, designers should look for ways to minimize the cost of the flight.

One of the most promising projects is Zunum Aero. The core idea of this project is the reduced value and costs of jet fuel due to the hybrid design of the aircraft. According to the official website, the cost of the flight will not exceed \$ 100. The company claims that it has found a way to cut fuel costs by 80%, the maximum flight distance is 700 miles, and cruising speed is 340 mph. That is why seat-mile costs 8 cents. This is a very impressive and competitive economy. As the battery technologies are improved, the company plans that their planes will using exclusively energy of the batteries and be controlled by a pilot, and later without the pilot (either autonomously or remotely).

This logistics of passenger traffic is especially relevant for the United States and Canada, where a large part of the population lives in suburbs and small towns that are not directly connected with large air terminals, but have small airports for small aircraft. The convenience of using hybrid aircraft offered by Zunum Aero is also ensured by the fact that there are fewer restrictions on transport safety, and therefore, landing control and flight departures will occur faster, without long-term inspection and registration, which in large airports often leads to longer waiting times.

From everything that has been said, it follows that currently active work is being done to develop and create a full-fledged and competitive airplane that can replace the usual turbojet aircraft. Also, most experts suggest that in the next 10 years not only the serial samples of light electric airplanes, but also medium ones will be available. The main reason for such forecasts is a strong breakthrough in the modernization of solar batteries, accumulator and electric motors.

*Scientific supervisor: Akopian T.V.,  
Senior Lecturer*