IEEE Tech Talk

High Energy Electric Ignition Systems

Live Stream from Seattle Washington
Tuesday June 22, 2021
4 pm PDT

Join us for a session on High Energy Electric Ignition Systems. Find out more on this new innovative technique.

High-energy electric ignition system is used for starting all jet engines. It has an ignition unit connected with a high-tension cable with two plugs being situated in different positions in the turbojet engine combustion system. The ignition unit has a high voltage transformer and storage capacitor. At the certain conditions, capacitor discharges the energy across the face of the igniter plug. The discharge takes the form of a high intensity flashover and fuel mixture is ignited in the relatively a stable boundary layer which then propagates throughout the combustion chamber. Periodic replacement of the igniter plug(s) is necessary due to the progressive erosion of the igniter electrodes caused by each discharge.

This traditional concept looks simple but real problems include safety, reliability, and all in the wide range of ambient operating temperatures. The most recent research in domain of micro plasma phenomenon supported with high-speed computational thermodynamics simulation provides a new avenues and solutions which can significantly reduce the life cycle costs and increase a reliability of the jet engine ignition system.

Mr. Novakovic has more than 30 years of experiences in various aircraft systems design, integration, testing, and certification. In his early career, working for Department of Defense in former Yugoslavia, he was a part of R&D team, developing turbo-jet engine control and health monitoring system. At the beginning of the nineties, he moved to Canada, and made transition to the area of Landing Gear Systems design and integration. In 2009, he joined Collins Aerospace (formally Hamilton-Sundstrand), Aircraft Electric Power division and since he has been developing electric power systems for major commercial programs including Boeing 787, 777X, Airbus A350, Bombardier A220, Embraer E2, COMAC 919 and Irkut MC21. In the recent years, his focus is on Aircraft Electrical Power System and Secondary Power Distribution Optimization where he contributed with several U.S. patents and technical publications. His technical articles are published in SAE Aerospace journals, and presented at international conferences and seminars. Master’s and Bachelor’s Degree, in Electrical Engineering.

IEEE-Seattle.org/cnt
Sign up today at https://events.vtools.ieee.org/m/275217
mike.brisbois@ieee.org | Mike Brisbois IEEE Consultant Network Chair | (708)668-5488 6/18/2021