“Shaping Dreams for Future Skies”
Introducing JAXA Aeronautics

Institute of Aeronautical Technology
Japan Aerospace Exploration Agency

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Hitoshi Fujiwara
Sites/Locations of the JAXA Aeronautics Activities

Nagoya Flight Research Center

Noshiro Testing Center (NTC)
Kakuda Space Propulsion center (KSPC)

Usuda Deep Space Center

Sagamihara Campus
Tsukuba Space Center (TKSC)
Earth Observation Center (EOC)

Chofu Aerospace Center (CAC)

Katsuura Tracking and Communication Station

Tokyo Office

Kansai Satellite Office (Industrial Collaboration Department)

Masuda Tracking and Communication Station
Uchinoura Space Center (USC)
Tanegashima Space Center (TNSC)
Okinawa Tracking and Communication Station

CAC Aerodrome Branch
JAXA’s Research Initiatives for Aviation
Mid-term plan for 2013-2017

3 major R&D programs and Basic research

**ECAT**
Environment Conscious Aircraft Technology Program

**STAR**
Safety Technology for Aviation and Disaster-Relief Program

**Sky Frontier**
Sky Frontier Program

**Science & Basic Tech.**
Aeronautical Science & Basic Technology Research Program
Current research on alternative fuels in JAXA

★ Research purpose
   ▪ Reduction in CO2 emission from
   ▪ Reduction of fuel cost,
   ▪ Fuel saving, diversity of fuel resource (recycling of wasted energy)

★ Target fuels
   (1) synthetic bio fuel, chemical component similar to Kerosene
   (2) ethanol, BDF (Bio Diesel Fuels)
   (3) mixture of kerosene and (2) or (1)

★ Research topics
   ▪ Effect of change in fuel on combustion performance and emissions
     NOx, UHC/CO, PM, stability, ignition and blow out, exit gas temp
     → Effect on global environment such as PM emission and contrail formation
       (including basic research on PM formation through the combustion process)

   ▪ Innovative method to produce alternative energy

   ▪ Any other issues on the use of alternative fuel at engine operations
     compatibility with seals, filters, fuel passage/pump/tank and so on.
**Current research on alternative fuels in JAXA**

**FY2013**  
20MW gas turbine combustor rig test with diesel and 100% BDF

**FY2014**  
Aviation gas turbine engine test with kerosene and HEFA fuel (will be performed soon)