



# UNISEC Lithuania Local Chapter Report

**Vidmantas Tomkus**  
Rome, Dec 2, 2017

**VU - Vilnius University**

<http://vu.lt> , <http://www.kosmonautai.lt>

Prof.: Liudas Tumonis, [liudas.tumonis@ff.vu.lt](mailto:liudas.tumonis@ff.vu.lt)

Student Repr.: Paulius Venclovas, [paulius.venclovas@ff.stud.vu.lt](mailto:paulius.venclovas@ff.stud.vu.lt)



**KTU - Kaunas University of Technology**

<http://ktu.edu>, <http://www.litsat1.eu/en>

Prof.: Andrius Vilkauskas, [andrius.vilkauskas@ktu.lt](mailto:andrius.vilkauskas@ktu.lt)

Student Repr.: Martynas Lendraitis, [sklandytojasml@gmail.com](mailto:sklandytojasml@gmail.com)



**VGTU - Vilnius Gediminas Technical University**

<http://www.vgtu.lt> , <http://cansat.lt>

Prof.: Raimondas Pomarnacki, [raimondas.pomarnacki@vgtu.lt](mailto:raimondas.pomarnacki@vgtu.lt)

Student Repr.: Narunas Kapočius, [narunas.kapocius@stud.vgtu.lt](mailto:narunas.kapocius@stud.vgtu.lt)



## Activities organized and financed by different institutions:

- **ESA**
- **European Commission / Horizon 2020 / Galileo Masters – DLR**
- **NASA**
- **Lithuanian Science Council,**
- **Lithuanian Agency of Science, Technology and Innovations**
- **VC “Practica Capital”**
- **UAB “Nanoavionics”**
- **ESA PhD/Postdoc Internships**
- **NASA students Internships**



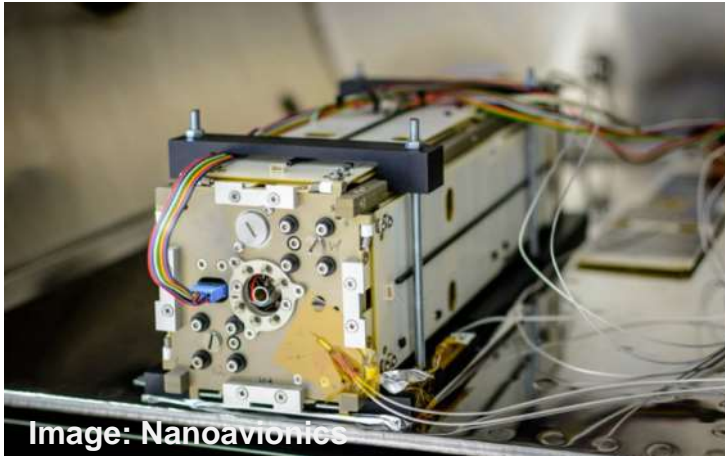
## Educational ESA PECS projects

- **ESA: Remote Sensing Training Course – Optical and SAR**
- **VU: „Basics of Aeronautics Technologies“**,
- **VGTU: “Interdisciplinary space science and technology project for VGTU students”**
- **LIC - Lithuanian Innovation Center: “Increasing Space Motivation for Participants of National and International Science Olympiads”**

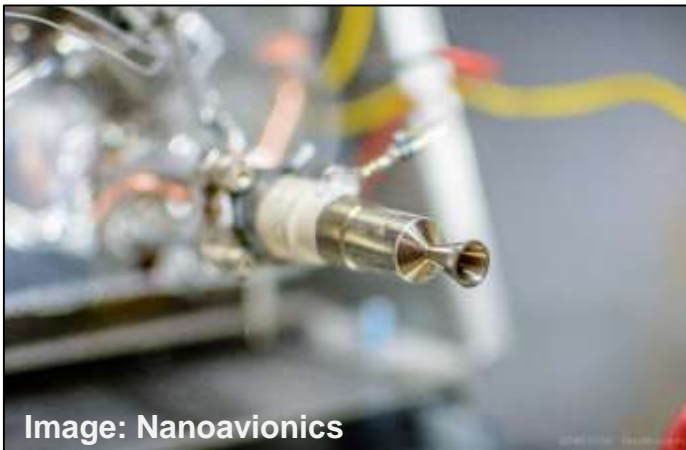
## University projects:

- **VU/KTU: “Workshops on Lunar Plant Module”**
- **VGTU: High school students classes “Design of Small Satellites Cansat”**



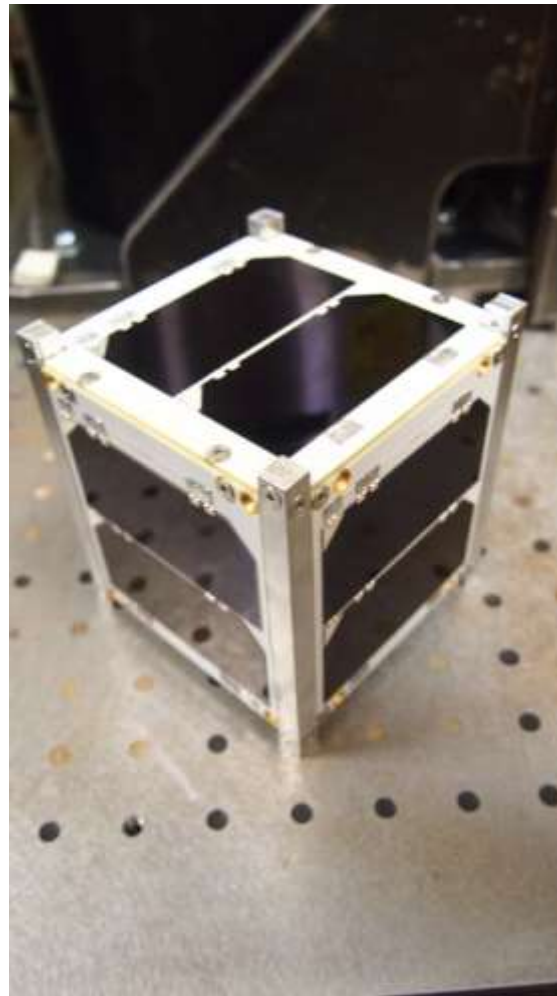


EC FP7  
QB50 project



V. Buzas, L. Mačiulis, L. Tumonis

- Launched on PSLV, Jun 23 2017
- 10 cm/s of delta-V, 2 s, 0.3 g monopropellant,
- Thrust 127 mN - 300mN,
- Orbital change 200 m confirmed by TLE



**VG TU, ESA  
PECS project**

**L. Mačiulis  
R. Pomarnacki  
D. Bručas  
A. Kilikevičius  
V. Purienė**

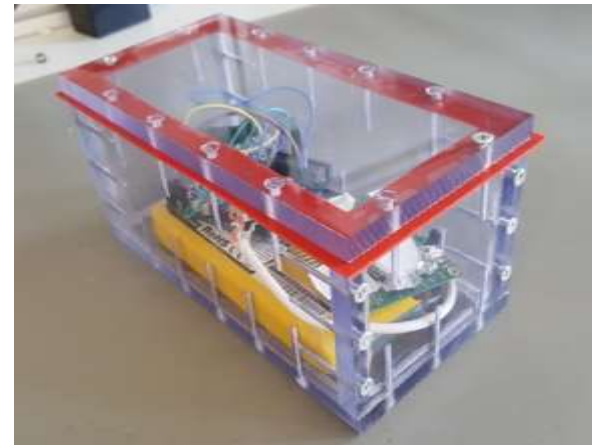
- **Structural**
- **EPS**
- **COM**
- **OBC**
- **Payload: GPS, High gain VHF array**



## VU/KTU University project

**M. Brazdžiūnas, A. Karpavičius  
A. Vilkauskas, A. Petravičius**

- Germination in lunar gravity and radiation
- Rate of growth (leaf area index) versus time
- Observation of circumnutating and phototropism
- CO<sub>2</sub> release during germination and subsequent uptake by photosynthesis.





## VGTU University Project: R. Pomarnacki, E. Šabanovič

- ARM Cortex M4F, GPS, Gyro
- Accel., Magnetom., Baromet.
- Camera, 3DR 433 MHz





**VU, Nanoavionics: L. Tumonis et al., “Cold start behavior of ADN-based monopropellant thruster for LituanicaSAT-2 CubeSat “, 8th European CubeSat Symposium, London, UK, 2016**

**VU, KTU: M. Brazdziunas, “Plants on the Moon: The Cubesat Shaped Plant Growth Experiment Module on the Lunar Surface”, 67th International Astronautical Congress Guadalajara, Mexico, 2016**

**VGTU, Elmika: L. Maciulis et al., “Design of a 1U Technology Demonstration CubeSat with Large Deployable Antenna Array”, 9th European CubeSat Symposium”, Belgium, 2017**

**VGTU: Pomarnacki et al., “Interdisciplinary project based learning of space science and technology for the Lithuanian Universities students”, 9th European CubeSat Symposium”, Belgium, 2017**



Thank you for attention !

Vidmantas Tomkus  
Lithuanian Aerospace Association  
[vto@space-lt.eu](mailto:vto@space-lt.eu)  
[www.space-eu.lt](http://www.space-eu.lt)