



SAPIENZA
UNIVERSITÀ DI ROMA

DIMA DEPARTMENT OF MECHANICAL AND AEROSPACE ENGINEERING

Newsletter - July/August 2018



HIGHLIGHTS

Sapienza at the top of the Shanghai ranking



The 2018 edition of the Academic Ranking of World Universities (ARWU) by Subject, published by Shanghai Jiao Tong University, confirms Sapienza as the top Italian university and its excellent performance at the global level. This year, in fact, Sapienza ranks amongst the first 20 universities worldwide in two subjects: Automation & Control (first in Italy and 16th worldwide – up from last year's 23rd place) and Aerospace Engineering (first in Italy and 17th worldwide - up from last year's 26th place). Moreover, Sapienza University ranks first in Italy in 13 subject areas, obtaining the best Italian ranking worldwide in Physics (first in Italy and 29th worldwide) and Instruments Science & Technology (second in Italy after Polytechnic of Milano and 46th worldwide).

In Italy, Sapienza is followed by the Polytechnic of Milano (first for 11 subjects in Italy), the University of Bologna (9 subjects), the University of Padua (8 subjects) and the University of Milan (7 subjects). In February 2018, the Quacquarelli Simonds (QS) Rankings by Subject placed Sapienza first worldwide in Classics, while, in May 2018, the Centre for World University Rankings (CWUR) ranked Sapienza as the top Italian University and 67th worldwide, up 17 positions over the previous year.

Prof. Gaudenzi, DIMA Director: "Congratulations to all the colleagues and staff involved in all the areas of the department who have contributed to this result and in particular to our youngest researchers, to whom we must certainly pay more attention than what we have done".

Seminars with prof. Claus-Dieter Ohl

On Monday 23 July and Wednesday 25 July, two seminars will take place with Prof. Claus-Dieter Ohl, actually associate professor at Otto-von-Guericke University of Magdeburg, in the picture above.

In the box the abstracts of the Seminars:



Monday, July 23 at 12,00 in the videoconference room of DIMA in Via Eudossiana 18:

The Dirty Truth of Surface Attached Nanobubbles

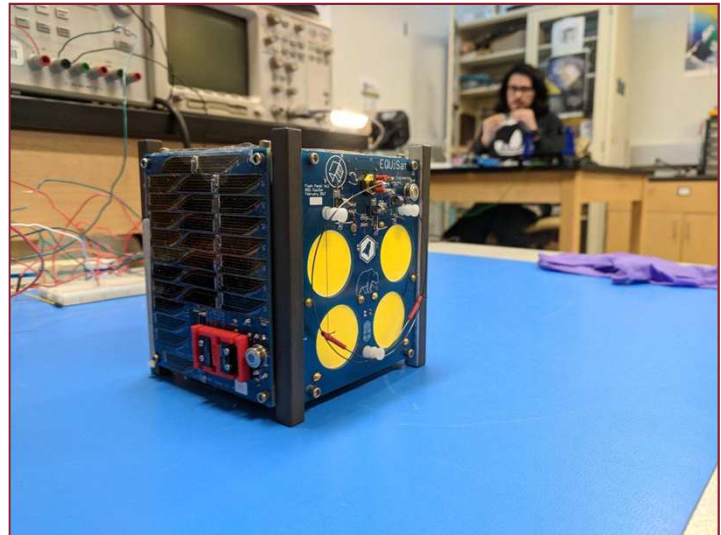
Surface attached nanobubbles have not only been a challenge to understand their diffusional stability but even more they challenged the experimentalist to prove their existence reliably. Only a multimodal optical-atomic force microscopy approach provided data to measure size and content of these soft objects. I will try to convince you that hydrophobic attraction and pinning is sufficient for the understanding of all reliable experimental data.

Wednesday, July 25 at 12,00 in the conference room of IIT in Viale Regina Elena 291:

Giant Shear Stress from Collapsing Cavitation Bubbles

Cavitation bubbles may be a nuisance or a blessing, yet they are able to create enormous forces on no-slip boundaries. In this presentation I'll summarise our 10 years of research to quantify, model and apply these forces to the benefit. We look into the application areas of ultrasound cleaning and drug delivery into biological cells. We'll also present novel simulations which resolve the unsteady boundary and discuss the rich fluid mechanics observed.

NEWS FROM DIMA



At 1.07 of Saturday the first contact Equisat - a cubesat of Brown University developed by Rick Fleeter and his students - was established by the small ground station of the Master in Space Systems and Services (Professional Master in Satelliti) placed in the Department of Mechanical and Aerospace Engineering in Rome, in the roof of the building close to ancient roman ruins of Colle Oppio.

Professor Paolo Gaudenzi, Director of DIMA: "Gianluca Palermo was the responsible for operations that so far are performing much better than expected! This is a very important accomplishment shared with my very good friend Rick Fleeter who was able to follow from Rome the deployment of his satellite from the International space station! In the pictures the cubesat and our ground station (antenna barely visible on the roof of the yellow building). Have a nice and fruitful mission Equisat!"

OPPORTUNITIES FOR RESEARCH, NETWORKING AND INTERNATIONALIZATION



- Within the framework of the Scientific and Technological Cooperation Agreement between the Government of the Republic of Italy and the Government of the Republic of Korea, the Directorate General for Country Promotion (Economy, Culture and Science) - Unit IX - of the Italian Ministry of Foreign Affairs and International Cooperation (MAECI), and the International Cooperation Bureau of the Korean Ministry of Science and ICT (MSIT), launch a call for proposals for the 12th Executive Program of Scientific and Technological Cooperation for the years 2019-2021. Proposals should include scientific and technological activities exhibiting strong bilateral cooperation, either by strengthening the existing, or by creating new collaborations or joint laboratories, aimed at concrete industrial impacts or targeting relevant scientific objectives. Deadline is fixed at September, 11. Further information are available on this website:

https://www.esteri.it/mae/resource/garegemellaggi/2018/07/bando_corea_final_text.pdf



- Horizon 2020: the publication of ERC 2019 calls is scheduled for 4 September. In the published note, the European Research Council defines the closing dates of the calls for tenders 2019: Starting Grant - deadline: 17 october 2018; Synergy Grant - deadline: 8 november 2018; Consolidator Grant - deadline: 7 february 2019; Advanced Grant - deadline: 29 august 2019; Proof of Concept Grant - deadline: 22 january 2019; 25 april 2019; 19 september 2019; In addition to the deadlines, the Council has announced some expected innovations in the new Work Program 2019.

Further information are available on this website:

<https://erc.europa.eu/sites/default/files/content/pages/pdf/ERC-2019-Work-Programme-main-changes.pdf>



- DG REGIO (General Directorate for Regional and Urban Policy) has opened a call to gather expressions of interest for external experts to support the implementation of the European Structural and Investment Funds. The aim of this call is to establish a list of external experts in the sector, able to draw up terms of reference for upcoming calls and to evaluate proposals for new grants and projects submitted for the RegioStars awards. Further information are available on this website:

http://ec.europa.eu/regional_policy/index.cfm/en/newsroom/funding-opportunities/calls-for-expressions-of-interest/