



André Antunes

Group Leader (Astrobiology)
Associate Professor



Astrobiology
Microbiology of Extreme
Environments
Geomicrobiology
Bioprospection

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Short Bio

André Antunes is an Associate Professor at the State Key Laboratory of Lunar and Planetary Sciences at Macau University of Science and Technology (MUST). There he is the leader of the Astrobiology Research Group and the coordinator of the Astrobiology and Cosmochemistry Experimental Platforms. He has done his undergraduate studies in Biology at the University of Coimbra (Portugal)- one of the oldest universities in Europe. His PhD research work was conducted at one of the most prestigious research centers in the field of Microbiology- the Lehrstuhl für Mikrobiologie und Archäozentrum of the University of Regensburg (Germany). His research career includes periods of work in several countries in Europe, as well as in Africa, and in the Middle East. He has acted as consultant and invited committee member for NASA, ESA, and the European Science Foundation and has been recently elected as vice-president of the board of directors of the newly created “Macao Association for Scientific Cooperation between China and Portuguese Speaking Countries”. He is an elected member of the Impact and Influence Committee of the Microbiology Society, editorial member for several leading journals in his field, and regular contributor to Science Communication activities in Macau’s media (Ponto Final newspaper- Microcosmos; Rádio Macau- Eureka). His current research focus revolves around biodiversity and bioprospection of unexplored deep-sea and extreme environments, adaptation to environmental extremes and environmental gradients. geomicrobiology, and astrobiology.

Education

- PhD: Biochemistry- University of Coimbra (PT)/ University of Regensburg (DE)
- Degree: Biology University of Coimbra (PT)

Professional Experience (selected)

- 2019-Current: Associate Professor- Macau University of Science and Technology (MO).
- 2016-2019: Senior Lecturer- Edge Hill University (UK).
- 2015: Research Consultant-KAUST (King Abdullah University of Science and Technology.)
- 2012-2014: EU Project Manager- MIRRI (Microbial Resource Research Infrastructure).

Recent Publications (selected)

- Hitesh, C., **Antunes, A.**, et al. (2021). Mars: New Insights and Unresolved Questions. *International Journal of Astrobiology*.
- Kelbrick, M., Abed, R., & **Antunes, A.** (2021). *Motilimonas cestriensis* sp. nov., isolated from an Inland Brine Spring in the UK, and emended description of the genus *Motilimonas*. *International Journal of Systematic and Evolutionary Microbiology* 71(3), 004763.
- Al-Mahrouqi, N., Muthukrishnan, T., Nallusamy, S., **Antunes, A.**, & Abed, R. M. M. (2021). Utilization of food wastes for the production of bioethanol using moderately halophilic bacteria isolated from a hypersaline microbial mat. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 1-12.
- Méndez, A., et al. (2021). Habitability Models for Astrobiology. *Astrobiology* 21(8), 1017-1027.
- **Antunes, A.**, Olsson-Francis, K., & McGennity, T. (2019). Exploring deep-sea brines as potential terrestrial analogues of oceans in the icy moons of the outer solar system. *Current Issues in Molecular Biology*, 38, 123-162.
- Simões, M. F., Ottoni, C. A., & **Antunes, A.** (2020). Biogenic Metal Nanoparticles: A New Approach to Detect Life on Mars?. *Life*, 10(3), 28.
- Taubner, R.S., et al. (2020). Experimental and simulation efforts in the astrobiological exploration of exooceans. *Space Science Reviews*, 216(1), 9. (**Nature 2020 Research Highlight**).
- Zhang, G., Dong, X., Sun, Y., **Antunes, A.**, Hikmawan, A., Haroon, M. F., Wang, J. & Stingl, U. (2020). *Haloferax profundus* sp. nov. and *Haloferax marisrubri* sp. nov., isolated from the Discovery Deep brine-seawater interface in the Red Sea. *Microorganisms* 8(10), 1475.
- Jebbar, M., Hickman-Lewis, K., Cavalazzi, B., Taubner, R. S., Simon, K. M. R., & **Antunes, A.** (2020). Microbial Diversity and Biosignatures: An Icy Moons Perspective. *Space Science Reviews*, 216(1), 10.
- Rettberg, P., **Antunes, A.**, et al. (2019). Biological contamination prevention for Outer Solar System moons of astrobiological interest– What do we need to know? *Astrobiology* 19, 1-24

Current Projects

- 2021-2022: ABAA-Astrobiology, Biodiversity and Applications of Extreme Environments in the Arabian Peninsula; HOME-MUST (MO): Co-PI.
- 2021-2022: MiBiT-CV: Microbiology and Biotechnology Training for Cabo Verde; Microbiology Society (UK): Co-PI.
- 2021-2024: B3iS - Biodiversity and Bioprospection of Biosurfactants In Saline environments; FCT (PT): Co-PI.
- 2020-Present: Use of Sulfate Reducing Bacteria in the Petroleum and derivatives treatment with electricity Biogeneration using solid membrane reactors of the type Microbial Fuel Cell; FAPESP (BR); Team member).
- 2018-Present: MEXEM- Mars Exposed Extremophile Mixture; International Space Station Access approved by NASA and ESA; Team Member.