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*Director of research in IRD Institut of
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Research lines (Areas):

- Isolation of microorganisms from natural ecosystems (bacteria, filamentous fungi, mushrooms,)
- Selection and domestication of wild strains and use in biotechnological processes
- Culture of microorganisms in Solid State Fermentation (SSF) with or without hydric stress
- Respirometry of Microorganisms grown in SSF on natural or synthetic solid supports
- Production of fungal enzymes (cellulases, amylases, pectinases, phytases, laccases, Mn peroxydase).
- Production of fungal metabolites (organic acids, alkaloids , mycotoxins in SSF).
- Production of fungal biomass (mycelium or spores) in solid culture media and in surface of cellophane.
- Biochemical analyses of sugars, proteins, enzymes (cellulases, amylases, pectinases, decaffeinases, tannases).
- Food microbiology, post harvest mould and mycotoxins.

Academic information:

Bachelor: Biochemistry, Medical Analyses

Master : Structural and Molecular Biochemistry

PhD 1 : Marine Microbiology (Numerical Taxonomy of spheric bacteria)

PhD 2 (Thèse d'Etat of Sciences (Biotechnology of filamentous fungi)

Remarks

1. Organisation of international meetings (seminars, workshop, congress,) and edition of the proceedings.
2. Participation and Coordination of international projects
3. Reviewer for international projects, articles.
4. **Publications:** total 150 articles, 9 books, in scientific journals, in proceedings of Scientific Meeting
5. **References:** 970 in Scientific journals, in books and others
6. **Research Cooperation:** with 14 Laboratory of Universities (France, Brazil, India, Mexico, Italy, UK etc.)

Patent in the topic:

Raimbault M., Roussos S., Oriol E., Barrios J., Gutierrez M. & Viniegra G. 1989. Procédé de culture de microorganismes sur supports solides imprégnés, en vue de la production et l'extraction d'enzymes et de métabolites. Brevet Français n°89.06558.

Roussos S., Hassouni H. & Ismaili-Alaoui M. 2008. Procédé de production de spores et de métabolites provenant de microorganismes d'origine fongique et leurs utilisations. Brevet français N° FR-07/05519.

Publications:

Gutiérrez-Sánchez G., Roussos S. & C. Augur C. 2004 Effect of the nitrogen source on caffeine degradation by *Aspergillus tamarii*. *Letters in Applied Microbiology* 38 (1) 50-55

Ramírez-Coronel A., Marnet N., Kumar Kolli V.S., Guyot S., Roussos S. & Augur C. 2004 Characterization and estimation of proanthocyanidins and other phenolics in coffee pulp (*Coffea arabica*) by thiolysis and MALDI-TOF mass spectrometry. *J. Agric. Food Chem.* 52 : 1344-1349

Brand D., Roussos S., Pandey A., Zilioli P.C., Pohl J. & Socol C.R. 2004. Development of a bionematicide with *Paecilomyces lilacinus* to control *Meloidogyne incognita*. *Appl. Biochem. Biotechnol.* 118 : 81-88

Arzumanov T., Jenkins N. & Roussos S. 2005. Effect of aeration and substrate moisture content on sporulation of *Metarhizium anisopliae* var. *acridium*. *Proc. Biochem.* 40 : 1037-1042.

Dantigny P., Bensoussan M., Vasseur V., Lebrihi A., Buchet C., Ismaili-Alaoui M., Devlieghere F. & Roussos S. 2006. Standardisation of methods for assessing mould germination : A workshop report. *Int. J. Food Microbiol.* 108 : 286-291.

Roussos S., Zaouia N., Salih G., Tantaoui-Elaraki A., Lamrani K., Cheheb M., Hassouni H., Verhe F., Perraud-Gaime I., Augur C. & Ismaili-Alaoui M. 2006. Characterization of filamentous fungi isolated from Moroccan olive and olive cake : toxinogenic potential of *Aspergillus* strains. *Mol. Nutr. Food Res.* 50 (6) :500-506.

Contreras Dominguez M., Guyot S., Marnet N., Le Petit J., Perraud-Gaime I., Roussos S. & Augur C. 2006. Degradation of procyanidins by *Aspergillus fumigatus*. Identification of a novel aromatic ring cleavage product. *Biochimie* 88 (12): 1899-1908

Rodriguez J.A., Mateos J.C., Nungaray J., González V., Bhagnagar T., Roussos S., Cordova J. & Baratti J. 2006. Improving lipases production by nutrient source modification using *Rhizopus homothallicus* cultured in solid state fermentation. *Proc. Biochem.* 41:2264-2269

Mateos J.C., Rodriguez J.A., Roussos S., Cordova J., Abousalham A., Carriere F. & Baratti J. 2006. Lipase from thermotolerant fungus *Rhizopus homothallicus* is more thermostable when produced using solid state fermentation then liquid fermentation procedures. *Enz. Microbiol. Technol.* 39: 1042-1050

Aloui F., Abid N., Roussos S. & Sayadi S. 2007. Decolorization of semisolid olive residues of "alperujo" during the solid state fermentation by *Phanerochaete chrysosporium*, *Trametes versicolor*, *Pycnoporus cinnabarinus* and *Aspergillus niger*. *Biochemical Engineering Journal*, 35 (2), p. 120-125.

Varzakas T.H., Roussos S. & Arvanitoyannis I. S. 2008. Glucoamylases production of *Aspergillus niger* in solid state fermentation using a continuous counter-current reactor. *International Journal of Food Science and Technology*, 43 (7), p. 1159-1168.

Lamrani K., Lakhtar H., Ismaili-Alaoui M., Ettalibi E., Boiron P., Augur C., Gaime-Perraud I. & Roussos S. 2008. Production of fumagillin by *Aspergillus fumigatus* isolated from traditional trituration units, "Maasra", in Morocco. *Micologia Aplicada International*, 20 (1), p. 35-41.

Brand D., Socol C.R., Sabu A., Roussos S. 2009. Production of fungal biological control agents through solid state fermentation : a case study on *Paecilomyces lilacinus* against root-knot nematodes. *Micologia Aplicada International*, 21 (2), p. 33-50.

Lakhtar H., Ismaili-Alaoui M., Philippoussis A., Perraud Gaime I. & Roussos S. 2010. Screening of strains of *Lentinula edodes* grown on model olive mill wastewater in solid and liquid state culture for polyphenol biodegradation. *International Biodeterioration and Biodegradation*, 64 (3), p. 167-172.

Roopesh K., Guyot S., Sabu A., Haridas M., Perraud Gaime I., Roussos S. & Augur C. 2010. Biotransformation of procyanidins by a purified fungal dioxygenase : identification and characterization of the products using mass spectrometry. *Process Biochemistry*, 45 (6), p. 904-913.

- Philippoussis A., Diamantopoulou P., Papadopoulou K., Lakhtar H., Roussos S., Parissopoulos G., Papanikolaou S. (2011). Biomass, laccase and endoglucanase production by *Lentinula edodes* during solid state fermentation of reed grass, bean stalks and wheat straw residues. *World Journal of Microbiology and Biotechnology*, 27 (2): 285-297.
- Contreras-Dominguez M., Guyot S., Roussos S., Augur C. 2011. Enzymatic degradation of procyanidin B1 by *Aspergillus fumigatus*. In *Chemistry and Biotechnology of polyphenols*. Sabu A., Roussos S., Aguilar C.N. (Eds) CIBET Publishers, Thiruvananthapuram, 66-74 pp.
- Djossou O., Perraud-Gaime I., Lakhil Mirleau F., Rodriguez-Serrano G., Karou G., Niamke S., Ouzari I., Boudabous A., Roussos S. 2011. Robusta coffee beans post harvest microflora: *Lactobacillus plantarum* sp. as potential antagonist of *Aspergillus carbonarius*. *Anaerobe*, 17 (6), p. 267-272.
- Aouidi F., Ayari S., Ferhi H., Roussos S., Hamdi M. (2011) Gamma irradiation of air-dried olive leaves: Effective decontamination and impact on the antioxidative properties and on phenolic compounds. *Food Chemistry* 127, 1105-1113.
- Roopesh K., Abhilash J., Haridas M., Sabu A., Perraud-Gaime I., Roussos S., Augur C. (2012) Dioxygenase from *Aspergillus fumigatus* MC8 : molecular modelling and in silico studies on enzyme-substrate interactions. *Molecular Simulation*, 38 (2), 144-151.
- Aouidi F., Dupuy N., Artaud J., Roussos S., Msallem M., Perraud-Gaime I., Hamdi M. (2012) Discrimination of five Tunisian cultivars by Mid Infra Red spectroscopy combined with chemometric analyses of olive *Olea europaea* leaves. *Food Chemistry*, 131 (1), 360-366.
- Aouidi F., Dupuy N., Artaud J., Roussos S., Msallem M., Perraud-Gaime I., Hamdi M. (2012) Rapid quantitative determination of oleuropein in olive leaves (*Olea europaea*) using mid-infrared spectroscopy combined with chemometric analyses. *Industrial Crops and Products*, 37 (1), 292-297.
- Gutierrez-Sanchez G., Atwood J., Kolli V.S.K., Roussos S., Augur C. (2012) Initial proteome analysis of caffeine-induced proteins in *Aspergillus tamarii* using two-dimensional fluorescence difference gel electrophoresis. *Applied Biochemistry and Biotechnology*, 166 (8), 2064-2077.