The present habilitation thesis, generically named "**Use the microbial biodiversity for biotechnological applications",** consist of five chapters presenting the candidate activity, Dr.Florentina Matei from the moment when she obtained the title of PhD in Life Sciences, in 2001. At the begging of the thesis it has been introduced the candidate's career evolution during the past 13 years, itemizing the most academic and scientific achievements, respectively involvement in 21 projects, from which 4 have been implemented on international level; for 9 of the projects as project manager; publication of 49 articles, from which 12 are ISI quoted; the candidate's Hirsch index is 4 (Researcher ID platform) and the RG (Researcg Gate) score is 14.34.

The most comprehensive chapter is the second one, containing the most important scientific achievements of the candidate. This chapter is organized following the main research topics in which the candidate has been involved, respectively the biodiversity and selection of valuable wine yeast strains, studies on phylamentous fungi biodiversity and mycotoxins production in agricultural and food products, antimicrobial activity of indigenous plants and biomass production for biofuel.

In the area of wine yeast biodiversity, the major results are linked to the selection of valuable local wine yeast strains from consecrated vineyards (Dealu Mare, Dealurile Bujorului, Panciu) and their oenological and molecular characterization (caryotype, PCR ITS-RFLP). From more than 500 yeast strains, nine have been kept as high potential fermentative strains, from which two have high aromatic potential (flor yeast).

In the field of micotoxinogenic fungi, the candidate has been involved in the development of a molecular method for micotoxinogenic fungi identification and has been member in the team which has first reported the *fluF* gene responsible for aflatoxins production in *Aspergillus flavus*. In the mean time, the candidate has been involved in modeling the growth and toxinogenesys for different fungi, as *Aspergillus flavus*, *Penicillium crysogenum* and *Fusarium graminearum*. Also, the candidate has been working in an international team and published a valuable review on isolation and identification of fungi responsible for earthy and mouldy off-flavours and mycotoxins production in wines.

Some preliminary results have been presented on the latest candidate's research related to the antimicrobial activity of indigenous plants (*Inula, Eupatorium* and *Helleborus)*. By now it has been proven that ethanol extracts from the roots of a Romanian cultivar of *Inula helenium* L. have significant activity against the pathogenic bacteria and dermatophytic fungi, while on filamentous fungi *A. niger* there is no inhibitory activity.

Belonging to an international project for biokerosene production, the candidate has presented the results obtained by the team on improving the *Camelina sativa* productivity and oil content by classical embryo-rescue culture. The first generation hybrid has shown top position on productivity and oil content (1.9% higher) than the parents. The research is still in progress. Also, in the same field, the candidate has been working on maize biomass hydrolysis (chemical pretreatment, followed by enzymatic degradation) for the biogas production.

In the third chapter are presented, shortly, the main academic achievements, linked to the activity in the Faculty of Biotechnologies from UASMV Bucharest, where the candidate was in charge with different microbiological courses and practical activities (General Microbiology, Industrial Microbiology, Food Microbiology, Microbial degradation of the pollutants). The candidate has been actively involved in students' graduation papers development on license and master level, as well as doctoral level. Also, are itemized the candidate involvement in peer-review activities (5 international journals) and projects' assessment (expert evaluator in internationals programs and 3 national programs).

A proposal for further career development has been provided at the end of the thesis, on both academic and research side.