

### PROJECT PLAN (2011-2016)

An	Stage	Objectives/activities	Expected results	Obtained results
2011	I	Biocatalysts selection Obtaining of starting materials used in biocatalytic reactions (reactives derivatives halides and new quaternary salts of ammonia)	Reactive derivatives halides and new quaternary ammonium salts	<i>It was obtained 36 new compounds of the class of quaternary pyridinium salts</i> <b>Scientific report</b>
2012	II	Synthesis of fluorescent molecules by cycloaddition/"click chemistry" reactions, both by classical methods and biocatalysis, using techniques belonging to "green chemistry": microwave, ultrasound and ionic liquid solvents	Preparation of fluorescent compounds by enzymatic catalysis	<i>Were obtained new 16 indolizine and triazole derivatives with fluorescent properties by biocatalytic reactions type "click chemistry"</i> <b>1 article published and 6 scientific participation:</b> <i>Tetrahedron, 68,2012, 6164-6168 F.impact- 3,25</i> <i>COFrRoCA, 2012, Bacău, 13th ; Tetrahedron Symposium, Challenges in Bioorganic &amp; Organic Medicinal Chemistry, 27,-29 iunie, 2012, Amsterdam, Olanda; Third Regional Symposium on Electrochemistry South-East Europe, Bucuresti, 13-17 mai 2012; 63rd, Annual Meeting of the International Society of Electrochemistry, Electron transfer in proteins and enzymes, 19-24 August 2012, Praga, Cehia</i> <b>Scientific report</b>

2013	III	<p>Physico-chemical characterization of synthesized compounds</p> <p>A.III.1.1.Characterization of compounds by IR, RMN, MS spectroscopy</p> <p>Biological characterization of synthesised compounds by evaluation of microbiological activity and antioxidant capacity</p>	<p>Spectral characterization of obtained compounds</p> <p>Participation on two conferences</p> <p>1 Article publishing</p>	<p><i>We have characterized the new 40 compounds obtained in the previous stage and antimicrobial and antioxidant properties were evaluated</i></p> <p><b>2articles published:</b>  <i>Tetrahedron, 69, 5495-5500, 2013- FI- 3,25,</i>  <i>Marine Drugs, 11(2), 431-439, 2013- FI- 4,02</i></p> <p><b>6 scientific participation:</b>  <i>Current opinion Biotechnology, 24, 2013, (International Conference of Applied Sciences Chemistry and Chemical Engineering CISA, Bacău, Romania 2013, European Biotechnological Congres, Bratislava 2013; 2nd International Symposium on Green Chemistry: Renewable Carbon and Eco-efficient Processes ISGC2, La Rochelle, France, 2013; World Chemistry IUPAC Congres, Istanbul, Turkey, 2013; XIIth International Conference on Molecular Spectroscopy - From Molecules to Nano- and Biomaterials, Wroclaw, Poland, 2013; Euroaliment, Galati, Romania, 2013</i></p> <p><b>Scientific report</b></p>
2014	IV	<p>Biological characterization of the synthesized compounds by toxicity and cytotoxicity studies</p> <p>Study of fluorescence spectra</p>	<p>Studies of the toxicity and cytotoxicity of the biosynthesized compounds; analyzing of fluorescence spectra of fluorescent compounds</p> <p>Participation on one conference</p> <p>1 Article publishing</p>	<p><b>2articles published:</b>  <i>Molecules, 19, 2014. -F. Impact-2,74</i>  <i>Revista de Chimie, 65, No. 8, 2014- F.impact 0,58</i></p> <p><b>2 scientific participation:</b>  - Conference of Applied Sciences Chemistry and Chemical Engineering, CISA, Bacău, mai 2014  - Colloque Franco-Român de Chimie Medicinale, Iași, octombrie 2014</p> <p><b>Book:</b> <i>Electrochimie.Principii fundamentale și aplicații</i></p> <p><b>Scientific report</b></p>

2015	V	<p>Interaction of the new compounds with DNA</p> <p>Electrochemical properties studies by cyclic voltametry</p> <p>Senzors obtaining essay using different techniques and testing the sensitives properties of the molecules</p>	<p>Participation on one conferences</p> <p>1 Article publishing</p>	<p><b>Articles:</b>  <i>Studia Universitatis Babes-Bolyai Chemia, 2015</i></p> <p><b>Book chapter:</b>  <i>"Scope of Novel Heterocycles from Organic and Pharmaceutical Perspective"- "Breakthroughs in indole and indolizine chemistry - new synthetic pathways, new applications", InTech open acces</i></p> <p><b>ISI proseedings:</b>  <i>Journal of Biotechnology, 2015, Fi. 3,108</i></p> <p><b>Conferences:</b></p> <ul style="list-style-type: none"> <li>• Eurobiotech, 2015</li> <li>• BIOTRANS 2015, Vienna, Austria, Jully, 2015.</li> <li>• Symposium EuroAliment 2015, ALL ABOUT FOOD, Galati, Romani, septembrie 2015,</li> <li>• Trans Mediterranean Colloquium on Heterocyclic Chemistry, TRAMECH VIII, November 2015, Antalya, Turkey</li> </ul> <p><b>Scientific report</b></p>
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2016	VI	Electrochemical properties studies by cyclic voltametry Senzors obtaining essay using different techniques and testing the sensitives properties of the molecules	Participation on one conference 1 Article publishing	<b>4 Articles:</b> <b>ISI</b> <i>Molecules, 2016, If 2,74</i> <i>Inorganica Chimica Acta, 2016, If. 1,78</i> <i>Scientific Study &amp; Research, Chemistry &amp; Chemical Engineering, Biotechnology, Food Industry, 2016</i> <b>BDI</b> <i>J. Electrochem. Sci. Eng., 2016</i> <b>2 ISI proceedings in:</b> <i>Journal of Biotechnology, 2016, Fi. 3,108</i> <b>12 Conferences:</b> <ul style="list-style-type: none"> <li>• European Biotechnological Congres, Riga, Letonia</li> <li>• NEW TRENDS IN APPLIED CHEMISTRY, 2016, Constanta, ROMANIA</li> <li>• 9eme COLLOQUE FRANCO-ROUMAIN DE CHIMIE APPLIQUÉE – COFrRoCA 2016, Franta</li> <li>• International Conference of Applied Sciences, CISA, BACAU</li> <li>• A XXXIV-a Conferință Națională de Chimie,</li> </ul> <b>Scientific final report</b>
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