Universitatea Naţională de Ştiinţă şi Tehnologie POLITEHNICA Bucureşti Nr. înreg.: ...../.....

IOSUD-UNSTPB

Şcoala Doctorală Inginerie Chimică şi Biotehnologii

F-17

MEMORIU ŞTIINŢIFIC

Drd. Ing. Laura RENEA (căsătorită CERNENCU)

Studii de doctorat

Perioada: ___4 ani + 1 an prelungire_____

Conducător ştiinţific: Prof. Dr. Ing. _ **Gheorghe MARIA** _____

Domeniu: __ de doctorat: ***Inginerie Chimică*** _____

Titlul tezei de doctorat:

"**Metodologie de elaborare a modelelor cinetice complexe, structurate pe mai multe niveluri de detaliere (hibride), folosite în calcule de inginerie (bio)chimică privind optimizarea unor reactoare industriale biochimice sau biologice",**

Activitate ştiinţifică (se vor lăsa doar cele care se aplică)

A. Lista de lucrări ştiinţifice (articole în reviste sau volume)

1.--- Maria, G.,(*) **Renea, L.,** Peptănaru, I.M., Maria, C. *"In-silico optimization of a bi-enzymatic batch reactor for mannitol production with continuous regeneration of nadh cofactor"*, Revue Roumaine de Chimie, 67(4-5), 2022, pp. 241–249, DOI: 10.33224/rrch.2022.67.4-5.02; WOS:000889338300004, IF=0.5

2.--- **Renea, L.,** Maria, G.(*), Gijiu, L.C., Maria, C., "*A multi-objective optimization of the bi-enzymatic batch reactor used for mannitol production"*, Bulletin Inst. Politechn. Bucharest (Ser. Chimie), 84(1), 2022, pp. 31-44, http://www.scientificbulletin.upb.ro/. ISSN= 1454-2331, WOS:000813376200003, IF=0.5

3.--- Maria, G.(*), **Renea, L.,** **"***Tryptophan production maximization in a fed-batch bioreactor with modified E. coli cells, by optimizing its operating policy based on an extended structured cell kinetic model*", Bioengineering-Basel, vol. 8, no. 12, pp. . 210-247, 2021, IF = 6.1, SRI= 1.241, ISSN= 2076-3417(clarivate), WOS:000742701800001; https://doi.org/10.3390/bioengineering8120210; IF=6.1

4.--- Maria, G.(*), Maria, C., **Renea, L.,** "*Application of (bio-)chemical engineering concepts and rules in Bioinformatics. Review of a CCM-based modular and hybrid kinetic model used to simulate and optimize a bioreactor with genetically modified cells*", Current Trends in Biomedical Engineering & Biosciences (Juniper publ., Irvine CA, USA), 20(3): pp. 556039, 2022, Googleschoolar, IDOI: 10.19080/CTBEB.2022.20.556039, IF = 2.2 (NON-isi).

5.--- Maria, G.(*), **Renea, L.,** Maria, C., "*Multi-objective optimization of the fed-batch bi-enzymatic reactor for mannitol production*", Dynamics-Basel, 2, pp.270-294, 2022, https://doi.org/10.3390/dynamics2030014; WOS:001314766100001; IF = 3.123

6.--- Gijiu, C.L., Maria, G.(*), **Renea, L.,** "*In-Silico Optimization of a Bi-Enzymatic Reactor for Mannitol Production Using Pareto-Optimal Fronts*", Chemical Engineering and Technology (Wiley), paper no. e202300555, 2025, doi: 10.1002/ceat.202300555 ; WOS:001357564500001; IF= 1.8.

7.--- Maria, G.(*), Gijiu, C.L., **Renea, L.,** Gheorghe, D., *"In-silico optimal operating policies of a batch or a fed-batch bioreactor for mAb production using a hybridoma cell culture"*, Revue Roumaine de Chimie, 2024, 69(5-6), 263-278, DOI: 10.33224/rrch.2024.69.5-6.04, IF=0.5, WOS:001336825700005

8.--- **Renea, L.,** Maria, G.(*), Gijiu, C.L., "*Optimal operating alternatives of a batch, or a series of batch reactors for mannitol production*", Bulletin of Romanian Chemical Engineering Society, vol. 10, no. 1, pp. 1-27, 2024; ISSN 2360-4697; non-ISI.

9.--- Maria, G.(*), **Renea, L.,** Gheorghe, D., "*In-silico optimization of a FBR for ethanol production by using several algorithms and operating alternatives*", Revue Roumaine de Chimie, 70(11-12), pp. 749-765, 2025, DOI: 10.33224/rrch.2025.70.11-12.03 (tribute prof. C. Silvestru), if= 0.5.

10.--- **Renea, L.**, Maria, G.(*), Gheorghe, D., "*In-silico derived optimal operation policies of a fed-batch bioreactor to maximize the mAbs production by using Pareto optimal techniques*", Revue Roumaine de Chimie, 70(5-6), pp. 261-278, 2025 (tribute prof. I. Grosu), WOS = 001555703500004, DOI: 10.33224/rrch.2025.70.5-6.03

11.--- Gheorghe, D., Maria, G., Gijiu, C.L., **Renea, L.**, "*In-silico optimization of a BR used in the 2nd step of Cetus process for fructose production*", U.P.B. Sci. Bull., Series B - Chemie, 87(2), pp. 35-52, 2025, http://www.scientificbulletin.upb.ro/ ; if = 0.5.

12.--- Gheorghe, D., Maria, G.(*), **Renea, L.**, Muscalu, C., "*The in-silico optimization of a fed-batch reactor used for the enzymatic hydrolysis of chicory inulin to fructose by employing a dynamic approach*", Dynamics - Basel, 5, pp.1-23, 2025, if=3.123, https://doi.org/10.3390/dynamics5010010 ; WOS = WOS:001482928800001

B. Capitol de carte

1.--- Maria, G., **Renea, L.**, 2022, "Tryptophan production maximization in a fed-batch bioreactor with modified E. coli cells, by optimizing its operating policy based on an extended structured cell kinetic model", In: Raganati, F., Procentese, A. (Eds.), "*Bioreactors: Control, Optimization and Applications*", MDPI publ., Basel, 2022, chap. 33. https://www.mdpi.com/topics/Bioreactor_Control DOI: 103390/bioengineering8120210

C. Participări la conferinţe/workshop-uri

1.--- **Renea, L.**, , Maria, G., "Optimal operating alternatives of a batch reactor, or a series of batch reactors to maximize the bi-enzymatic production of mannitol", *22-th Romanian International Conference on Chemistry and Chemical Engineering RICCCE-22*, Sinaia (Romania), 7-9 Sept. 2022. (oral communication).

2.-- Maria, G., Gheorghe, D., **Renea, L.**, "In-silico optimal operating policies of a batch or a fed-batch bioreactor for mAbs production using a hybridoma cell culture", *Medicines between Information and Life Sciences International Conference*, Institutul de Cercetari Chimico- Farmaceutice ICCF Bucureşti, Sept. 23-24, 2024. Section "Pharmaceutical Biotechnologies (Bioengineering) ", poster.

D. Brevete

Nu

E. Proiecte de cercetare ştiinţifică

Nu

F. Stagii de perfecţionare

Nu

G. Cursuri de perfecţionare

Nu

H. Membru în comitete de organizare sau comitete ştiinţifice ale conferinţelor/colective de redacţie ale unor reviste

Nu

Student-doctorand

Ing. **Laura RENEA (căsătorită CERNENCU)**