



## Prof Dr. Zakia HAMMOUCH

- Doctor of Applied Mathematics and Mechanical Engineering, Picardie Jules Verne University France
- Full Professor at Ecole Normale Supérieure de Meknès  
Moulay Ismail University Meknes Morocco

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## Education

June 2015	Habilitation thesis defended at University of Moulay Ismail, entitled <i>Modeling, analysis and numerical approximation of some problems arising in Mathematical engineering.</i>
April 2007	Qualification by the CNRS (National Council of Scientific Research, France) in the following topics : <ul style="list-style-type: none"><li>- Applied Mathematics (SECTION 26).</li><li>- Mechanical Engineering (SECTION 60).</li></ul>
October 2006	PhD Thesis in Applied Mathematics, defended at University of Picardie Jules Verne Amiens, France and Academy of Sciences Budapest Hungary, Entitled: <i>Mathematical and numerical study of some problems arising in fluids dynamics.</i>
March 2003	Certified in Control and automation from The Engineering School Ponts et Chaussées of Paris France (Control Training Site European Project 2022-2023).
September 2000-June 2002	Master's degree in Applied Analysis at University of Picardie Jules Verne France. Master's degree in Applied Mathematics at University of Fes, Sidi Mohamed Ben Abdellah Morocco.

## Professional experience

2025-2028	Research Associate at Department of Applied Mathematics, School of Science and Technology, Sefako Makgatho Health Sciences University, South Africa
Since September 2024	Adjunt Professor at Saveetha School of Engineering, Tamil Nadu University India
Since October 2023	Visiting Professor at Kyung Hee University Seoul South Korea
Since June 2022	Coordinator of International cooperation at Private University of Fez, Morocco
May 2020 – April 2025	Research Associate at Thu Dau Mot University, Vietnam (Contract of 5 years)

Since November 2020	Consultant at China Medical University, Taichung Taiwan (Permanent position)
Since December 2021	Full Professor at University Moulay Ismail Morocco.
Since June 2015	Associate Professor at University Moulay Ismail Morocco.
Avril 2009 – Mai 2015	Assistant Professor at University Moulay Ismail Morocco.
2007-2008	Research Associate at Laboratoire Amiénois de Mathématiques Fondamentales et Appliquées LAMFA UMR 6140 CNRS, France.
2006-2007	Assistant Professor at University of Picardie Jules Verne France.
2004-2005	Lecturer at University of Picardie Jules Verne France.

## Achievements and Awards

- **Research Excellence Award by CLARIVATE-Web of Science**, 2021.
- **Best Researcher Award by Scopus/Elsevier**, 2022
- Appointed as Member of the **CRIMS African Union of Mathematics for the Maghreb Region** 2023-2027
- **Distinguished Arab researcher Award** by the Union of Arab Universities and Arab Impact Factor Project Irbid Jordan 2023
- **Best Scientist** of Moulay Ismail University according to ADScientific Index World Scientist and University Rankings 2024
- **Best Scientist** of Moulay Ismail University according to ADScientific Index World Scientist and University Rankings 2021, 2022, 2023 and 2024
- **Best Scientist** of Thu Dau Mot University Vietnam according to ADScientific Index World Scientist and University Rankings 2022 and 2021.
- **Best Mathematics Scientists in Morocco**, according the list of **Research.com** 2023
- Ranked at the list of **2% top researchers** in Morocco by Stanford University for 2022
- Ranked at the list of **2% top researchers** in Morocco by Stanford University for 2023
- **Oliviu Gherman Award of Fractional Calculus**, 2020 from Biruni University Turkey.
- **The International Entrepreneurs, Academicians & Researchers Guild (EARG) Award-2024**, MTTF Foundation India.
- **Distinguished Researcher Award** by The American Lebanese University ICMMAAC2024.

## Research interests

- Complex systems
- Fluids Mechanics
- Energy
- Complex systems, circuits design and control

- Numerical analysis
- Differential equations
- Fractional calculus and applications
- Population dynamics
- Artificial intelligence

## Publications and metrics

I published several publications about (162 papers), 145 papers are indexed in Scopus, 122 papers are indexed in Web of Science Clarivate, others are online (not yet indexed).

## Conferences (Plenary/Invited Speaker)

- **(Invited Speaker)** 7th International Conference on Mathematical Modelling, Applied Analysis and Computation (ICMMAAC 2024) in Beirut, Lebanon. 18-20 April 2024. LAU
- **(Invited Speaker)** The Faculty Development Program (FDP) on "Exploring the Dynamics: Frontiers in Dynamical Systems Research" organized by the Department of Mathematics Jointly with School of Emerging Sciences & Technology, Gujarat University from 20th to 24th May 2024 .
- **(Invited Speaker)** The 12th International Conference on Applied Analysis and Mathematical Modeling (ICAAMM 2024), July, 19-23 2024 Istanbul Turkiye.
- **(Invited Speaker)** International Conference (In Memory of Late Professor S. L. Singh) on Nonlinear Analysis and Applications (ICNAA 2024)" in the breathtaking region of Uttarakhand
- **(Invited Speaker)** International Conference on Non-linear Analysis and Optimization (ICAN-OPT\_2025) along with the Workshop on Fixed Point Theory and Its Applications, May 8-10, 2025, at Kathmandu University, Dhulikhel.
- **(Invited Speaker)** The International Conference on Fractional Calculus and Applications From December 26, 2024, to December 30, 2024 Sousse Tunisia
- **(Invited Speaker)** Plancks2024, 06-07 Mars 2024, Faculté des Sciences de Meknès Université Moulay Ismail, Morocco.
- **(Invited Speaker)** ACMA 2024, 20-23 November 2024, Abdou Moumni University Niamey, Niger
- **(Invited Speaker)** The 3rd International Conference on Applied Mathematics in Engineering (ICAME'24) Balikesir Turkey, June 26-28, 2024
- **(Invited Speaker)** The 7th UMT International Conference on Pure and Applied Mathematics (7th UICPAM 2023), University of Management and Technology, Lahore Pakistan.
- **(Keynote Sepaker)** The 6th International Conference on Pure and Applied Mathematics (ICPAM) will take place at the University of Sargodha, Pakistan, from December 06-07, 2023.
- **(Invited Speaker)** 6th International Conference on Mathematics and Related Sciences (ICMRS 2023), Antalya-Turkey, november 2023
- **(Invited Speaker)** 22-26 nov 2023 The International Conference on Mathematical Analysis, Applications and Computational Simulation (ICMAACS 2023)
- **(Invited Speaker)** "New Mathematical Concepts and Applications in Life Sciences" Casablanca from 4 to 8 March 2024, Morocco
- **(Invited Speaker)** GICPAM2023 Conference, Garrison University Lahore, Pakistan
- **(Invited Speaker)** Groupement Euro-Maghrébin de Mathématiques et leurs Interactions (IRN CNRS), GE2MI conference 2023 - Levico - October 2-6 2023.

- **(Invited Speaker)** The 2023 Conference on Nonlinear Science and Complexity (hybrid ) will be hosted by the Biruni University, Turkey, for five days ( 10-15, July 2023).
- **(Plenary speaker)** The International Conference on Mathematical Analysis, Applications and Computational Simulation (ICMAACS 2023) Shanghai China.
- **(Plenary speaker)** 6th International Conference on Pure and Applied Mathematics (December 06-07, 2023)m Sargodha Pakistan.
- **(Plenary speaker)** 6 th International Conference on Mathematical and Related Sciencesm Turkey October 2023.
- **(Plenary speaker)** The Eighth International Conference of the Arab Impact Factor, Aug. 29-31. 2023 Irbid Jordan
- **(Plenary speaker)** The international conference entitled "New Mathematical Concepts and Applications in Life Sciences" to be held in Casablanca from 4 to 8 March 2024
- **(Plenary speaker)** The 6th International Conference on Mathematics and Related Sciences (ICMRS 2023), Antalya Turkey
- **(Plenary speaker)** The International Research Outreach Programme (IROP- 2022), FACULTY OF MATHEMATICS-INFORMATICS TEACHER EDUCATION, Dong Thap University, Vietnam
- **(Plenary speaker)** The First Academia International Conference on Mathematics and Mathematics Education (AICMME-2021) Siirt University from 25-27 November 2021.
- **(Plenary speaker)** ICMME'2021, Gazi University Turkey, by MATDER-Association of Mathematicians in cooperation with Gazi University.
- **(Plenary speaker)** The 3rd Garrison International Conference on Pure and Applied Mathematics (GICPAM-2023), Lahore Garrison University, Lahore, Pakistan June 21-22, 2023.
- **(Plenary speaker)** The International Conference on Mathematical Analysis, Applications and Computational Simulation (ICMAACS 2023), 22-26 November 2023 Shanghai, China
- **(Plenary speaker)** 5th International Conference on Communication and Computational Technologies (ICCCT 2023), Rajasthan Institute of Engineering and Technology, Jaipur, India JANUARY 28-29, 2023
- **(Plenary speaker)** The 3rd International Conference on Applied Mathematics in Engineering (ICAME'24), Balikesir Turkey June 26-28, 2024
- **(Plenary speaker)** The Congress on Control, Robotics, and Mechatronics (CRM2023), An International Conference of Mechanical and Robotic Engineering, Kota India MARCH 25-26, 2023
- **(Plenary speaker)** INTERNATIONAL CONFERENCE on Recent Advances in Material Science and Computational Techniques (RAMSACT) Jaipur India, 30 – 31 May 2022
- **(Plenary speaker)** INTERNATIONAL MEET ON METAMATERIALS AND NANOPHOTONICS, METAMEET2022, MARCH 28-30, 2022, DUBAI, UAE
- **(Plenary speaker)** The 1st International Workshop on Recent Trends in Modeling and Its Applications-2022, (IWRTMIA-2022), September 4th – 8th, 2022 College Ghazipur UP, India
- **(Plenary speaker)** THE INTERNATIONAL E-CONFERENCE ON PURE AND APPLIED MATHEMATICAL SCIENCES (ICPAMS-2021), Tunisia 7-10 June 2021
- **(Plenary speaker)** The 4th International Conference On Mathematical Modelling, Applied Analysis And Computation (ICMMAAC-21), 05-07 August 2021 Rajasthan University India (A Virtual Conference)
- **(Plenary speaker)** The World Forum for Women in Science will be held in Malaysia from 12-15 September 2022.
- **(Plenary speaker)** 2nd International Conference on Recent Trends in Applied Research (ICoRTAR 2021, A virtual conference) October 08-09, 2021
- **(Plenary speaker)** The International Conference on Mathematics, Computational Sciences and Statistics (ICoMCoS) 2022, Universitas Airlangga Indonesia
- **(Plenary speaker)** The 6th UMT International Conference on Pure and Applied Mathematics (6th UICPAM-2020), Lahore Pakistan
- **(Plenary speaker)** The 3rd International Conference On Mathematical Modelling, Applied Analysis And Computation (ICMMAAC-20), 07-09 August 2020.

- **(Plenary speaker)** The 5th International Conference on 'Pure and Applied Mathematics,' organized by the Department of Mathematics, Sargodha University Pakistan February 24-25, 2020
- **(Plenary speaker)** The Groupement Euro-Maghrébin de Mathématiques et leurs Interactions (IRN CNRS), 2-6 October Levico Italy
- **(Plenary speaker)** The 7th International Congress on Medical Sciences and multidisciplinary Approaches, 11-12 NOVEMBER 2023 ISTANBUL, Turkey
- **(Plenary speaker)** The International Workshop on Nonlinear Analysis and Applications CMAP Lahore Pakistan 16-18 November
- **(Invited speaker)** The EMN Meeting on Nanoparticles 2019, June 10 to 14, 2019 in Prague, Czech Republic
- **(Invited speaker)** The “2nd International Conference on Mathematical Modelling in Applied Sciences, ICMAS’19”, Belgorod-Russia, during August 20-24, 2019.
- **(Invited speaker)** The International Conference on Special Functions & Applications (ICSFA-2018) November 22 - 24, 2018, India
- **(Invited speaker)** International conference on Computational Methods in Sciences and Engineering, Gelisim University, Turkey 7-12 Jul 2019.
- **(Invited speaker)** The International Conference on Mathematics: An Istanbul Meeting for World Mathematicians 3 July 2019 Istanbul, Turkey
- **(Invited speaker)** International conference on recent advances in pure and applied mathematics Istanbul Turkey 12-15 june 2019.
- **(Invited speaker)** The INTERNATIONAL CONFERENCE ON MATHEMATICS AND ITS APPLICATIONS GCU LAHORE PAKISTAN Nov : 13-15, 2018
- **(Invited speaker)** The ICMMAAC’18 International Conference on Mathematical Modeling, Applied Analysis and Computation, JECRC India 6-8 july 2018
- **(Invited speaker)** The International Conference on Mathematics and Information Sciences Feb. 15-17, 2018, Egypt
- **(Invited speaker)** The International Conference on Mathematics and Computing Indian Institute of Technology (B.H.U.) Varanasi, India
- **(Invited speaker)** The 2nd International Conference on Information Technology and Applied Mathematics (ICITAM 2019) 7-9 march 2019 Haldia Institute India
- **(Invited speaker)** The Aims Conference, Buea Cameroun 07 decembre 2017
- **(Invited speaker)** The International Conference on Mathematics and Mathematics Education (ICMME-2016), Elazig Turkey, 11-14 May 2016
- **(Invited speaker)** The 24th International Conference on Finite or Infinite Dimensional Complex Analysis and Applications, Anand International College of Engineering, Jaipur, India from 22-26 August 2016.

## Participation to conferences/Workshops

- The 2019 Fields Medal Symposium, November 4 - 7, 2019, The Fields Institute Toronto Canada
- The International Conference on Class Groups of Number Fields and Related Topics (ICCGNFR) Harish-Chandra Research Institute, Allahabad, India, during 04-07 September, 2017.

- Selfsimilar solutions in nonlinear PDE's, Bedlewo Poland September 5-9, 2005. Journées de l'Analyse Nonlinéaire, Tétouan, Morocco. 28-30 March 2005.
- Nonlinear Diffusion Mathematics and Applications à El-escorial Madrid, Spain June 25-29 2007.
- Autosimilarité et Applications INSA (Institut National des Sciences Appliquées) Toulouse, France, 20-25 June 2005.
- Congrès de l'Analyse Numérique (CANUM), SMAI Evian-les-Bains, France. May 23- 27, 2005.
- Nonlinear Partial Differential Equations and Applications : Conference in honor of Jim Serrin on the occasion of the awarding of the title of Doctor Honoris Causa of Université François Rabelais Tours, France, June6-8, 2005.
- Séminaires de Mathématiques Supérieures Montréal, Canada. From 20 June au 03 July 2004

## Scientific Membership

- Member of **European Women in Mathematics (EWM)**
- Member of : **Cellule d'Accompagnement de projets CAP (Project Assembly Office)** at University Moulay Ismail, Morocco
- Member of The **Commission of Research and Innovation of the African Union of Mathematics**
- Member of the SM2A (**Moroccan Society of Applied Mathematics**)
- Permanent member of **The Organization for Women in Science for the Developing World (OWSD)**
- Advisory member of the **International Institute of Engineers (Computer, Electrical & Electronic Engineers)**

## Funded research projects

- Supervisor of the project : UMI-2016 « *Convection dans des fluides viscoélastiques : Étude analytique, approximation et simulation numérique.* »
- Member of the project : UMI-2018 « *Modélisation et simulation des réseaux mobiles* ».
- Member of the project UMI-Université du Littoral « *Calcul scientifique pour le contrôle optimal, traitement du signal image et réseau mobile* ».
- Member of the project : “*Newtonian and non-Newtonian nanofluid boundary layer flows under influence of both zero and nonzero normal fluxes*” Research Grant No : FRGS/1/2015/SG04/UM/02/ supervised by Dr Rizwan Ul Haq Quaid Azzam University Islamabad Pakistan.

## PhD Thesis/Postgraduate Supervisor

I supervised the PhD Thesis/Postgraduate of the following students :

- **Kamal Ait Touchent (2017):** *Integral transforms and applications in fractional calculus*
- **Ibrahim Nali (2019) :** *Travelling waves in some natural phenomena.*

- **Nassira Madani (2022)** : *Analytical and numerical study of some problems arising in biology*
- **Abdelouahed Alla Hamou (2021)**: *Epidemiological models with fractional operators.*
- **Omar Tajmouati (2022)**: *Non local fractional operators and applications in complex systems*
- **Rizwan Ul Haq (2016)**: *Finite elements methods and applications in heat and mass transfer problems (postdoc)*

## Research Stays

- May 2023 : Visiting Professor to Harran University Turkey with a grant of Tubitak.
- February 2020 : Visiting Professor to University of Management and Technology UMT Lahore, Pakistan.
- October 2019 : Visiting Professor to the University of Free State Bloemfontein South Africa.
- November 2019 : Visiting Professor to Harran University Sanliurfa, Turkey.
- April 2018 : Visiting Professor to the Laboratoire des Technologies Innovantes LTI CNRS, University of Picardie Jules Verne, Amiens France.
- April 2017 : Visiting Professor to Cankaya University Ankara Turkey with the grant of CWM-IMU.
- June 2004 : Visiting researcher to Département de Mathématiques de l'Université Cadi Ayyad Guéliz Marrakech with the grant of Action Intégrée Volubilis PAI n°MA/05/116
- Avril 2004 : Visiting Researcher to University of Budapest (invited by Prof. Robert Kersner with the grants of Region Picardie France).

## Teaching Experience

### Courses taught :

- Differential Calculus
- Numerical Analysis
- Algebra and geometry
- Numerical Linear Algebra
- Calculus I
- Calculus and Analytic Geometry
- Algebra 2 and Trigonometry
- Partial Differential Equations
- Real Analysis I
- Real Analysis II
- Mathematical Method for Physics



# Editorial Boards

## ❖ Editor-in-Chief/Editor/Associate Editor

- Editor in chief of Intelligent Systems for Sustainable Energy and Development, SabaPub
- Editor for Franklin Institute Journal, Elsevier
- Alexandria Engineering Journal, Q1 Elsevier (2019-2022)
- Scientific African Scopus, Elsevier (2020-2023)
- Nanomaterials and Applications Worldscientific.
- Partial Differential Equations in Applied Mathematics, Scopus Elsevier
- Information Sciences Letters, Scopus Natural Science Publishing
- Journal of Innovative Applied Mathematics and Computational Sciences
- Mathematical Modelling and Numerical Simulation with Applications, Dergipark
- Advances In Computational Mathematics And Modelling (ACMM)
- Reports of Computational and Applied Mathematics (RCAM)
- Letters On Applied and Pure Mathematics
- Bulletin of Biomathematics
- Journal of Fractional Calculus and Nonlinear Systems (JFCNS)
- International Journal of Mathematics and Computer in Engineering
- Journal of Mathematical Control Science & Applications
- International Journal of Mathematics and Computer in Engineering, Sciendo
- Mathematics in Natural Science (MNS), Online : ISSN 2600-7665
- Journal of Applied and Computational Sciences (JOFACS)
- International Journal of Mathematics and Mathematics Education.

## ❖ Guest editor of the following special issues :

I edited several special issues in indexed journals, namely :

- New trend of differential and integral operators above power law and their applications, **Chaos Solitons Fractals** Q1, Elsevier
- Epidemiological Modeling, **Results in Physics** Q1, Elsevier
- Special issue Computational Mathematics and Modeling, **Applied Mathematics and Nonlinear Science**, Scopus indexed Sciendo
- New trends of numerical and analytical methods with application to real world models for instance RLC with new nonlocal operators Journal : **AIMS Mathematics** Q2 (American Institute of Mathematical Sciences)
- Focus Point on Modelling Complex Real-World Problems with Fractal and New Trends of Fractional Differentiation Journal : **European Physical Journal Plus** Q1, Springer
- New trends on numerical analysis and analytical methods with their applications to real world problems Journal : **Discrete and Continuous Dynamical Systems DCDS – S** (American Institute of Mathematical Sciences)
- Innovative Applications of Fractional Calculus, **Hindawi Journal of Mathematics**



- Setting the Future of Smart Industry 4.0 with Metaheuristic Algorithms, **Mathematical and Computational Applications (MCA)** MDPI
- Recent Advances in Fractional Calculus with Real World Applications, **Aims mathematics Q2**
- Recent Theoretical and Numerical Methods for Solving Nonlinear Evolution Equations with Fractal and Fractional Derivatives, **Fractals Worldscientific**
- Mathematical Methods in Ordinary and Partial Differential Equation, in **Results in Nonlinear Analysis Q3**
- New Trends for Discrete Fractional Calculus with Applications, **Symmetry MDPI Q1**
- Recent Advances in Applied Mathematics and Computational Sciences, **Contemporary Mathematics**
- Utilizing Particle Swarm Optimization Algorithm for Energy Management Application, **Energy Engineering**, Tech Science Press
- Advanced Analysis and Modeling on Biological Systems, **Mathematical and Computational Applications** (ISSN 2297-8747) MDPI
- New Developments of Computational and Analytic Methods in Science and Engineering, **Proceedings of the Institute of Mathematics and Mechanics Q2**
- Fuzzy Logic and its Application to Modeling Epidemics: Coronavirus and Beyond, **Applied And Computational Mathematics Q1**

## Conference Organization

- **I am the general chair of the International Conference on Computational Mathematics and Engineering Sciences, several editions have been organized, namely :**
  - The First International Conferences on Computational Mathematics and Engineering Sciences, Errachidia 3-6 mars 2016.
  - The second International Conferences on Computational Mathematics and Engineering Sciences, Istanbul 19-21 may 2017.
  - The Third International Conferences on Computational Mathematics and Engineering Sciences, Girne Cyprus 02-04 may 2018.
  - The Fouth International Conference on Computational Mathematics and Engineering Sciences, 20-22 Avril 2019, Antalya Turkey.
  - The Fifth International Conference on Computational Mathematics and Engineering Sciences, 20-22 May 2020 (Online due to COVID).
  - The Sixth International Conference on Computational Mathematics and Engineering Sciences, 20-22 May 2021, Van Turkey
  - The Seventh International Conference on Computational Mathematics and Engineering Sciences, 20-22 May 2022, Ordu University Turkey .
  - The Eighth International Conference on Computational Mathematics and Engineering Sciences, 21-22 May 2023, Firat University Turkey
- **I am the general Chair of The African Days on Mathematics (An international Conference) and the Co-Chair of the African Conference on Mathematics and the Co-Chair of the International Congress BVD:**
  - The African Days on Applied Mathematics, 02-04 november 2017, Errachidia.

- The African Conference on Mathematics, which will be held 22-26 November 2023 Kigali Rwanda.
- The Second International Conference on Sustainable Buildings and Cities (BVD'23) will take place at Fes Private University, Morocco on May 11-12, 2023.
- **I was selected as Scientific/Organizing committee member for more than 50 international conferences, workshops and Research Schools of Mathematics or Engineering Science, in several countries.**

## University service

- Research Exper at the National Council of Scientific and Technical Research (CNRST)
- Head of Department of Sciences at Ecole Normale Supérieure of Meknes, Moulay Ismail University since december 2020
- Faculty Promotion Review Committees member
- Member of the recruitment committees for Assistant professors, Fields : Mathematics, Applied Mathematics and Didactics of Mathematics
- Coordinator of The Master's Degree Physical Science and Chemistry, Moulay Ismail University Morocco
- Coordinator of The Bachelor of Mathematics and Mathematical Education at Moulay Ismail University Morocco
- Head of Research Team E3MI : Equipe de Modélisation Mathématiques, Mécanique et Informatique, Faculty of Sciences Errachidia, Morocco 2018-2020
- Member of Laboratory of Intelligent Systems, Energy and Sustainable Development, Department of Electrical Engineering, Private University of Fez, Morocco
- Coordinator of Academic and Scientific Cooperation at The Private University of Fes Morocco
- PhD program member : Mathématiques Informatique et Application at Moulay Ismail University Morocco

## Thesis committee member

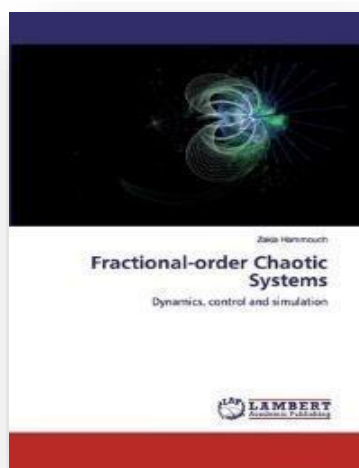
- **Examiner** of the PhD Thesis presented by **Shaik Rafiuzzama**, field: Mechanical Engineering Thesis Title: *Computational Analysis of Solar Air Heater Utilizing a Combination of Alternating Dimple Protrusions and Intrusions on Absorber Plate with Triangular Ducts*. GITAM University, India, 2024.
- **Examiner** of the PhD Thesis presented by **D. Senthil Raja**, field : Mathematics. Thesis title : *Existence and Uniqueness Results for Fractional Differential Equations and Impulsive Fractional Differential Equations in Banach Spaces*. Periyar University, Tamil Nadu, India, 2024.
- **Examiner** of the PhD Thesis presented by **Lazaar Oussma** Discipline: Mathematics Specialization: Applied Mathematics, Title: *Stability and Discontinuous Stabilization in Dynamical Systems Modeling Prey-Predator Dynamics interactions*, Moulay Ismail University Morocco 2024.

- **Examiner** of the PhD Thesis presented by **Gizachew Tirite Gellow**, field : Applied Mathematics. Thesis title : *Analysis of a Mathematical Model of Malaria Transmission*, University of South Africa, Pretoria, 2024.
- **External Assessor** of the PhD Thesis of **Mahluli Naisbitt NCUBE**. Title : *Operational matrices for solving variable order differential equations*, 2023, University of South Africa, Pretoria.
- **External Assessor** of the PhD Thesis of **M. Deepika**, title : *A Computational Approach and Analysis for a Class of Time Fractional Partial Differentials Equations*, National Institute of Technology Kurukshetra, Haryana India 2023
- **External Assessor** of the PhD Thesis of **Hangwelani Magau**, Applied Mathematics Faculty: *Natural and Agricultural Sciences Title of Thesis: Global rate of change with local and on local operators: A new aproach to predict complex systems*, 2023.
- **External Assessor** of the PhD Thesis of **Lamrani Ilyasse**, , Applied Mathematics, Faculty of Sciences Meknes, Moulay Ismail University. Thesis Title : *Control Optimal et Optimisation. Stabilization of Coupled Systems by Multiplicative Controls*, Morocco 2024.
- **External Assessor** of the PhD Thesis presented by **MAHESH GARVANDHA**. Title : *A STUDY OF REAL FLUIDS WITH MHD EFFECT IN AND OVER CYLINDRICAL FLOW REGIMES*, GITAM University India, 2023.
- **Examiner** of the PhD Thesis presented by **Khalid ZGUAID**, title : *Regional Observability of Linear and Semilinear Time-Fractional Systems*, Moulay Ismail University Morocco 2023
- **Examiner** of the PhD Thesis, presented by **Ms. Tanvi**, title : *Stability Analysis and Optimal Intervention for HIV-TB Co-infection Including Fractional Order and Delay in Treatment*, University. University of Delhi, India 2022
- **Examiner** of the Ph.D. Thesis of **Mohammed SHIMI**, title : *Study of Some Nonlinear Nonlocal Problems in Fractional Sobolev Spaces with Variable Exponent*, Sidi Mohamed Ben Abdellah University Fes Morocco, 2020.
- **Examiner** of the Ph.D. Thesis of **Athmane BOUMAZOURH**, entitled : *Study of Some Nonlinear Elliptic Systems in Integer and Fractional Modular Spaces*, Sidi Mohamed Ben Abdellah University Fes Morocco, 2020.
- **Examiner** of the Ph.D. Thesis of **Moussa KHOUAKHI**, entitled : *On Some Elliptic And Parabolic Problems In Unbounded Domains*, Sidi Mohamed Ben Abdellah University Fes Morocco, 2019.
- **External Assessor** of the Thesis of **Amy Allright**, Free State University June 2019.
- **External Assessor** of the Thesis of **Kaserake Kabunga** University Of Pretoria South Africa, June 2020
- **External Assessor** of the Thesis of **Mpafane Deyi**, Institute of Groundwater Sciences, South Africa, June 2019
- **External Assessor** of the Thesis of **Maryem Jidou Khyar** University of Fes Dhar El Mahraz, November 2019.
- **External examiner** of the thesis entitled : *The natural transform decomposition method for solving fractional differential equations*, by **Mahluli Naisbitt NCUBE**, University of South Africa, Pretoria. September 2018.
- **External examiner** of the thesis entitled : *Quantification and modeling of heterogeneity in aquifers*, by : **Pacome Ahokpossi**, Free State University, South Africa January 2018.
- **Examiner** of the thesis entitled : *Contributions à l'amélioration des performances des Réseaux DTN à la base de la DRHT*. Presented by : **El Arbi ABDELLAOUI ALAOU**, I21 January 2017 at FST Errachidia, Morocco.

## Published/Edited books

### ❖ Published book :

- **Title :** Fractional-order Chaotic Systems
- **Publisher :** Lambert Publishing
- **Author :** Zakia Hammouch
- **ISBN-10 :** X223343882



### ❖ Edited Books :

- **Title :** Mathematical Modeling and Intelligent Control for Combating Pandemics
  - **Editors :** Zakia Hammouch, Mohamed Lahby, Dumitru Baleanu
  - **Publisher :** Springer Nature
  - **ISBN :** 9783031331824, 3031331826
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- **Title :** *Proceeding of the 4th International Conference on Computational Mathematics and Engineering Sciences*
  - **Editors :** Hemen Duta, Zakia Hammouch, Hasan Bulut, Haci M ; Baskonus
  - **Publisher :** Springer
  - **ISBN :** 9783030391133, 3030391132
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- **Title :** Nonlinear Analysis: Problems, Applications and Computational Methods
  - **Editors :** Zakia Hammouch, Hemen Dutta, Said Melliani and Michael Ruzhansky
  - **Publisher :** Springer
  - **ISBN :** 9783030622985, 3030622983

- **Title :** *New Trends in Fractional Differential Equations with Real-World Applications in Physics*
- **Publisher :** Frontiers
- **Editors :** Jagdev Singh, Jordan Hristov, Zakia Hammouch
- **ISBN :** 9782889663040, 2889663043
- **Title :** *Convergence of Antenna Technologies, Electronics, and AI*
- **Editors :** Zakia Hammouch, Ouazzani Jamil
- **Publisher :** IGI Global
- **DOI:** 10.4018/979-8-3693-3775-2
- **ISBN13:** 9798369337752 | EISBN13: 9798369337769

