Curriculum Vitae

PART ONE: PERSONAL AND ACADEMIC DATA

Name: **Messaoud BOUNKHEL,** Date of Birth**: 15/12/1973**
Current Academic Rank: **Full Professor**
Address: Department of Mathematics, College of Science, King Saud University,
P.O. Box 2455, Riyadh 11451, Saudi Arabia,
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Academic Degrees:
1. **B.A./B.Sc.,** University of Batna,   College of Science, Batna, Algeria,   30 /06/ 1994.
2. **Master:** University of Montpellier 2, College of Science,   Montpellier, France, 30/06/1995.
   Title of Master's Thesis: **Viscosity sub-derivatives and solutions in smooth Banach spaces and its applications to metric regularity**.
3. **Ph.D.:** University of Montpellier 2, College of Science,   Montpellier, France, 21 /01/1999.
   Title of Ph.D. Dissertation: **Tangential regularity in non smooth analysis**.

PART TWO: RESEARCH WORK

A) Awards:

  1- King Saud University Award for Scientific Excellence (Award for best book author) for the year 2012/2013 for the book: *Regularity concepts in Nonsmooth Analysis: Theory and Applications*, (304 pages), December 2012, *Springer Optimization and its Applications,* Vol. 59. By Messaoud Bounkhel.
  2- Best Research Paper Award 2014 during CMCGS 2014 conference in Singapore. link: https://www.youtube.com/watch?v=s3wRtFwcqv8 .

B) Published Books

1. M. Al-Abdullatif and **M. Bounkhel**, *Elementary Mathematics for Students of Scientific Faculties*, Edition King Saud University, 2014.

2. **M. Bounkhel,** *Regularity concepts in Nonsmooth Analysis: Theory and Applications*, (304 pages), 2012, *Springer Optimization and its Applications,* Vol. 59. http://www.springer.com/mathematics/book/978-1-4614-1018-8.

3. Z. Elbalkhi,   L. Tadj, and **M. Bounkhel**, *Introductory to Inventory theory (in Arabic)* (Textbook for 222 OR), College of Science, King Saud University, 2004.

C)   Published Papers:

1. **M. Bounkhel** and L. Thibault, *Scalarization of tangential regularity of set-valued mapping,* Set-valued Analysis*, 1999,* 7, No.1, pp. 33-53.
2. **M. Bounkhel** and L. Thibault*, Subdifferential regularity of directional Lipschitzian functions* ,Canad. Math. Bull., 2000, 43, No. 1, pp. 25-36.
3. **M. Bounkhel** and L. Thibault, *On   various notions of regularity of sets in non smooth analysis,* Nonlinear Anal.: Theory, Methods and Applications, 2002, 48, No. 2, pp. 223-246.

4. **M. Bounkhel** and L. Thibault, *Directionally pseudo-Lipschitz set-valued mappings*, J. Math. Anal. Appl., 2002, 266, No. 2, pp. 269-287.

5. **M. Bounkhel,** *On Arc-wise essentially smooth mappings between Banach space*, J. Optimization, 2002, 51, No. 1, pp. 11-29.

6. **M. Bounkhel** and L. Thibault, *Tangential regularity of Lipschitz epigraphic set-valued mappings*, Optimization , pp. 69-82, Lecture Notes in Econom. and Math. Systems, Springer, Berlin, 2000, 481.

7. **M. Bounkhel**, *On the distance function associated with a set-valued mapping*, J. Nonlinear and Convex Analysis, 2001, 2, No.2, pp. 265-278.

8. **M. Bounkhel**, *Existence results of non convex differential inclusions*, Portugaliae Mathematica, 2002, 59, No. 3, pp. 283-310.

9. **M. Bounkhel***, General existence results for second order non convex sweeping process with unbounded perturbations*, (Portugal) Port. Math. **60** (2003), no. 3, 269--304.

10. **M. Bounkhel***, L. Tadj, and A. Hamdi, *Iterative Schemes to Solve Non convex Variational Problems*, J. Ineq. Pure & Appl. Math., 2003, 4, Issue 1, Article 14.

11. **M. Bounkhel** and M. Yarou, *Existence results for nonconvex sweeping processes with perturbations and with delay: Lipschitz case*, Arab Journal of Mathematics, 2002, 8, No. 2, pp. 1-12.

12. S. Mecheri and **M. Bounkhel**, *Some variants of Anderson's Inequality in C1-classes,* J. Ineq. Pure & Appl. Math., 2003, 4, Issue 1, Article 24.

13. S. Mecheri and **M. Bounkhel***, Global minimum and Orthogonality in C1-classes*, J. Math. Anal. Appl. **287** (2003), no. 1, pp. 51-60.

14. **M. Bounkhel** and D. Azzam, *Existence results for second order nonconvex sweeping process*. Set-valued analysis, *Set-Valued Anal.* **12** (2004), no. 3, pp. 291-318.

15. **M. Bounkhel** and D. Azzam, Théorèmes d'existence pour des les inclusions differentielles du second ordre, C.R.A.S ,, Serie I, 336, 2003, 657-659.

16. **M. Bounkhel** and M. Yarou, *Existence results for first and second order nonconvex sweeping processes with perturbations and with delay, Port. Math,* **61** (2004), no. 2, pp. 207-230.

17. **M. Bounkhel**, *Scalarization of normal Fréchet regularity for set-valued mappings*, New Zealand Journal of Mathematics, (New Zealand), 2004, **33** , No. 2, pp. 129-146.

18. **M. Bounkhel,** *Global minimum of nonlinear mappings and Orthogonality in C^1-Classes*, New Zealand Journal of Mathematics, (New Zealand), 2007, **36**, pp. 147-158.

19. **M. Bounkhel**, *Existence results for second order nonconvex sweeping processes with perturbations and with delay: Fixed point Approach*, Georgian Mathematical Journal, (Georgia), 2006, 13, No. 2, pp. 239-249.

20. **M. Bounkhel,** *On minimizing the norm of linear maps in Cp-classes*, Applied Sciences (APPS), (Romania), 2006, 8, No. 1, pp. 40-47.

21. **M. Bounkhel,** *Existence and Uniqueness of some variants of Nonconvex sweeping processes*, Journal of Nonlinear and Convex Analysis, (Japan), 2007, 8, No. 2, pp. 311-323.

22. **M. Bounkhel**, *Arc-wise essentially tangentially regular set-valued mappings*, CUBO a Mathematical Journal, (Brazil), *Cubo* **10** (2008), no. 1, 43—66.

23. **M. Bounkhel** and A. Jofre, *Subdifferential stability of the distance function and its applications to nonconvex economies and equilibrium*, Journal of Nonlinear and Convex Analysis, (Japan), (2004), 5, No.3. pp. 331-347.

24. **M. Bounkhel** and J. Bounkhel, *Inegalitees Variationnelles Nonconvexes*, (French) [*Nonconvex variational inequalities*], ESAIM Control Optim. Calc. Var. (France), (2005), 11, No. 4, pp. 574-594.

25. **M. Bounkhel** and T. Haddad, *Existence of Viable Solutions for Nonconvex differential inclusions*, Electronic Journal of Differential Equations (EJDE), (USA), (2005), No. 50, 10 pp.

26. **M. Bounkhel** and B. El-Sinan, *An iterative method for nonconvex equilibrium problems*, JIPAM. J. Inequal. Pure Appl. Math. (Australia), (2006), 7, No. 2, Article 75, 8 pp.

27. **M. Bounkhel** and L. Thibault, *Nonconvex sweeping process and prox-regularity in Hilbert space*. J. Nonlinear Convex Anal., (Japan), 2005, 6**,** No. 2, pp. 359-374.

28. **M. Bounkhel** and L. Tadj, *Minimizing Energy use for road expansion in Transportation system using optimal control theory*, Appl. Math. E-Notes, (Taiwan), 2006, 6, pp. 159-166.

29. **M. Bounkhel** and T. Haddad, *An existence result for a New Variant of the Nonconvex Sweeping Process,* Portugaliae Mathematica, (Portugal), 2008, 65, Fasc. 1, 2008, pp. 33-47.

30. **M. Bounkhel,** L. Tadj, and R. Hedjar, , *Nonlinear receding horizon control of production inventory systems with deteriorating items,* Yugoslav Journal of Operation Research (YUJOR), (Serbia and Montenegro), Yugoslav Journal of Operation Research (YUJOR), 2008, 10, n. 8, 1-9.

31. **M. Bounkhel,** and L. Tadj, *Optimal control of deteriorating production inventory systems,* Applied Sciences (APPS), (Romania), 2005, 7, pp. 30-45.

32. **M. Bounkhel,** L. Tadj, and Y. Benhadid, *Optimal control of a production system with inventory level dependent demand*, Appl. Math. E-Notes, (Taiwan), 2005, **5,** pp. 36-43.

33. R. Hedjar, **M. Bounkhel,** and L. Tadj, *Receding horizon control of a hybrid production system with deteriorating items*, Nonlinear Analysis, (USA), 2005, 63, No. 3, pp. 405-422.

34. R. Hedjar, **M. Bounkhel,** and L. Tadj, *Predictive control of periodic-review production inventory systems with deteriorating items*, TOP published by Sociedad de Estadistica e investigacion Operativa Madrid Spain , (Spain), 2004, 12, No. 1, pp. 193-208.

35. R. Hedjar, **M. Bounkhel**, and L. Tadj, *Self-tuning optimal control of periodic-review production inventory systems with deteriorating items*, Adv. Model. Optim. (Romania), 2007, 9**,** No. 1, pp. 91-104.

36. L. Tadj, **M. Bounkhel,** and Yacine Benhadid, *Optimal control of a production inventory system with deteriorating items*. International J. of Systems Science, (United Kingdom), 2006, 37**,** No. 15, pp. 1111-1121.

37. Yacine Benhadid , L. Tadj, and **M. Bounkhel,** *Optimal control of production inventory systems with deteriorating items and dynamic costs*. Appl. Math. E-Notes, (Taiwan), 2008**,** 8**,** pp. 194-202.

38. **M. Bounkhel** and L. Tadj, *Optimal design of a bilk service queue,* Investigacao Operacional, Publication of the APDIO - Associação Portuguesa de Investigação Operacional, (Portugal), 2008**.,** Vol. 26**,** pp. 157-164.

39. **M. Bounkhel** and R. Al-Yusof, *First and Second Order Sweeping Processes in Reflexive Smooth Banach spaces ,* Set-Valued Var. Analysi, Vol. 18, No. 2, 151-182, 2010

40. **M. Bounkhel** and B. R. Al-Senan, *General existence results for nonconvex third order differential inclusions*, Electronic Journal of Qualitative Theory and Differential Equations, No. 21, 10 pp., 2010.

41. **M. Bounkhel** and R. Al-Yusof, *Proximal Analysis in reflexive smooth Banach spaces,* Nonlinear Analysis Theory, Methods & Applications, Vol. **73,** Issue 7, 1921-1939, 2010.

42. Zhe G. Zhang, L. Tadj, and **M. Bounkhel**, *Cost Evaluation in M/G/1 Queue with T-Policy Revisited*, EJOR European Journal of Operation Research, 214 (2011), pp. 814-817.

43. **M. Bounkhel** and C. Castaing, *State dependent Sweeping process in reflexive smooth Banach spaces*. Set-valued and Variational Analysis, Jun2012, Vol. 20 Issue 2, pp. 187-201.

44. **M. Bounkhel**, *Implicit differential inclusions in reflexive smooth Banach spaces*, accepted 10 March 2011, Proceedings of the Americam Mathetical Society, Aug2012, Vol. 140 Issue 8, pp. 2767-2782.

45. **M. Bounkhel**, *Existence of Solutions for convex sweeping processes in p-uniformly smooth and q-uniformly convex Banach spaces*, Electronic Journal of Differential Equations, 2012, Vol. 2012, pp. 1-6.

46. **M. Bounkhel**, *Existence results for second order convex sweeping processes in p-uniformly smooth and q-uniformly convex Banach spaces*, E. J. Qualitative Theory of Diff. Equ., No. 27 (2012), pp. 1-10.

47. **M. Bounkhel** and B. R. Al-Senan, *Proximal Subdifferentials in Lp-spaces and Applications to Variational Problems*, Journal of Nonlinear and convex analysis, 2012, Vol. 13 Issue 2 pp. 293-312.

48. **M. Bounkhel** and B. R. Al-Senan, *Implicit second order differential inclusions in reflexive smooth Banach spaces*, Set-Valued and Variational Analysis, Mar 2013, Vol. 21 Issue 1, p1-16.

49. **M. Bounkhel** and B. R. Al-Senan, *General existence results for third order nonconvex state dependent sweeping processes with unbounded perturbations*, Journal of Applied Mathematics 2012. pp. 1-17.

50. **M. Bounkhel**, *Directional Lipschitzness of minimal time functions in Hausdorff topological .vector spaces*, SVAA, 2013, DOI 10.1007/s11228-013-0247-2

51. **M. Bounkhel** , *On subdifferentials of a minimal time function in Hausdorff topological vector spaces*, 2013, Applicable Analysis: An International Journal, DOI: 10.1080/00036811.2013.848271

52. **M. Bounkhel**, *Subdifferential properties of minimal time functions associated with set-valued mappings with closed convex graphs in Hausdorff topological vector spaces*, Journal of functions /spaces and Applications, 2013. http://www.hindawi.com/journals/jfsa/aip/707603

53. **M. Bounkhel**, *Existence of solutions for differential inclusions with nonlinear growth conditions .in Banach spaces*, The Scientific World Journal 2013, Article number 591620

54. **M. Bounkhel** and C. Li, *Frechet and proximal regularities of perturbed distance functions at .points in the target set in Banach spaces*, JNCA, Vol. 15, No. 6, 1331-1347, 2014

55. **M. Bounkhel** and R. Hedjar, *Real-time obstacle avoidance for a swarm of autonomous mobile robots*, International Journal of Advanced Robotic Systems, April 2014, **11**:67. doi: .10.5772/58478

56. **M. Bounkhel**, *On subdifferentials of a minimal time function at points outside the target in .Hausdorff topological vector spaces*, Journal of Convex Analysis, Vol. 22, No. 2, 2015

57. **M. Bounkhel** and C. Li**,** *Subdifferential regularities of perturbed distance functions outside the target set in Banach spaces*, Nonlinear Analysis, 173-188, 2014.

58. **M. Bounkhel** and L. Tadj, *Optimal harvesting effort for nonlinear predictive control model for a single species fishery, Mathematical Problems in Engineering, Volume 2015, Article ID 367593, 8 pages.* February 2015.

59. **M. Bounkhel***, Iterative Methods for nonconvex equilibrium problems in uniformly convex and uniformly smooth Banach spaces*, Journal of functions spaces, *Volume 2015, Article ID 346830, 18 pages.* March 2015.

60. 60- **M. Bounkhel***, Generalized projections on closed nonconvex sets in uniformly convex and uniformly smooth Banach spaces*, Journal of functions spaces, *Volume 2015, Article ID* 478437*, 18 pages.*

61. **M. Bounkhel***, Existence of Equilibria and fixed points of set-valued mappings on epi-Lipschitz sets with weak tangential conditions*, Journal of functions spaces, *Volume 2016, Article ID* 5671729*, 9 pages.*

62. **M. Bounkhel***, Calculus rules for V-proximal subdifferentials in smooth Banach spaces*, Journal of functions spaces, *Volume 2016, Article ID* 1917387*, 18 pages.*

63. **Messaoud Bounkhel**, Tadj, Lotfi; Asik-Dizdar Ozen , Predictive Control of a Production System that Uses Advertising , ARABIAN JOURNAL FOR SCIENCE AND ENGINEERING,Volume: 42 Issue: 7 Pages: 2961-2969 Published: JUL 2017.

64. **Bounkhel, M**.; Bounekhel, Dj. Iterative Schemes for Nonconvex Quasi-Variational Problems with V-Prox-Regular Data in Banach Spaces JOURNAL OF FUNCTION SPACES Article Number: 8708065. Published: 2017.

65. **Bounkhel, Messaoud** Mathematical modeling and numerical simulations of the motion of nanoparticles in straight tube ADVANCES IN MECHANICAL ENGINEERING Volume: 8 Issue: 8 Article Number: 1687814016656965 Published: AUG 2016.

66. Hedjar, Ramdane; **Bounkhel, Messaoud**, Wireless model predictive control: Application to water-level system ADVANCES IN MECHANICAL ENGINEERING Volume: 8 Issue: 4 Article Number: 1687814016643639 Published: APR 2016.

67. **Bounkhel, Messaoud** , Calculus Rules for V-Proximal Subdifferentials in Smooth Banach Spaces JOURNAL OF FUNCTION SPACES Article Number: 1917387, Published: 2016.

68. **Bounkhel, Messaoud** , Existence of Equilibria and Fixed Points of Set-Valued Mappings on Epi-Lipschitz Sets with Weak Tangential Conditions JOURNAL OF FUNCTION SPACES Article Number: 5671729 Published: 2016.

69. **Bounkhel, Messaoud**, On Subdifferentials of a Minimal Time Function in Hausdorff Topological Vector Spaces at Points Outside the Target Set JOURNAL OF CONVEX ANALYSIS Volume: 22 Issue: 2 Pages: 493-520 Published: 2015.

70. **Bounkhel, Messaoud** , Generalized Projections on Closed Nonconvex Sets in Uniformly Convex and Uniformly Smooth Banach Spaces JOURNAL OF FUNCTION SPACES Article Number: 478437 Published: 2015.

71. **Bounkhel, Messaoud** , Iterative Methods for Nonconvex Equilibrium Problems in Uniformly Convex and Uniformly Smooth Banach Spaces, JOURNAL OF FUNCTION SPACES Article Number: 346830 Published: 2015.

72. **Bounkhel, Messaoud**; Tadj, Lotfi , Optimal Harvesting Effort for Nonlinear Predictive Control Model for a Single Species Fishery MATHEMATICAL PROBLEMS IN ENGINEERING Article Number: 367593 Published: 2015.

73. Mostafa Bachar, **Messaoud Bounkhel,** Mohamed A. Khamsi, Uniform convexity in $l\_p(.)$, **Vol. 10 (10),** 5292-5299, Published 2017.

74. Dj. Bounekhel, **M. Bounkhel**, and M. Bachar, *Existence Results for Second Order Nonconvex Sweeping Processes in q-Uniformly Convex and 2-Uniformly Smooth Separable Banach Spaces*, Symmetry-Basel, **Vol. 11(1),** Published 2018.

75. M. Bachar, O. Mendez, M. Bounkhel , Modular uniform convexity of lebesgue spaces of variable integrability, Symmetry-Basel, **Vol. 10(12),** Published 2018.

76. M. Bachar, Mohamed A. Khamsi, W. M. Kozlowski, M. Bounkhel , Common fixed points of monotone Lipschitzian semigroups in Banach spaces, J. Nonlinear Sci. Appl. **Vol. 11 (1),** 73-79, Published 2018.

77. M. Bachar, Mohamed A. Khamsi, W. M. Kozlowski, M. Bounkhel , Common fixed points of monotone Lipschitzian in hyperbolic metric spcaes, J. Nonlinear and convex analysis. **Vol. 19 (6),** 987-994, Published 2018.

78. M. Bachar, Mohamed A. Khamsi, O. Mendez, **M. Bounkhel** , *A geometric property in $l\_{p(.)}$ and its applications*, Mathematische Nachrichten. 2019;292:1931–1940. https://doi.org/ 10.1002/mana.201800049.

79. **M. Bounkhel** and L. Tadj, Y. Benhadid, and R. Hedjar, *Optimal Control of Nonsmooth Production Systems with Deteriorating Items, Stock-Dependent Demand, with or without Backorder,* Symmetry-Basel, 2019, 11, 183.

80. **M. Bounkhel** and M. Bachar, *Generalised-prox-regularity in reflexive smooth Banach spaces with smooth dual norm,* JMAA, 475 (2019), 699-729.

81. **M. Bounkhel** and L. Tadj, and R. Hedjar, *Steady-State Analysis of a Flexible Markovian Queue with Server Breakdowns,* Entropy, 2019, 21, 259.

82. **M. Bounkhel** and R. Hedjar, *An Atomatic collision avoidance algorithm for multiple marine surface vehicles*, INTERNATIONAL JOURNAL OF APPLIED MATHEMATICS AND COMPUTER SCIENCE, 2019, Vol. 29, No.4, 759-768.

83. **M. Bounkhel** and L. Tadj, and R. Hedjar, *Model Predictive Control of the Harvesting Effort of a Sustainable Seafood with a Nonlinear State Equation,* MATHEMATICAL PROBLEMS IN ENGINEERING Article Number: 5823465 Published: 2019.

84. M. Bachar, Mohamed A. Khamsi, and **M. Bounkhel,** *The opial condition in variable exponent sequence spaces l_p(.) with applications,* Carpathian Journal of Mathematics, 2019, Vol. 35, No. 3, 273-279.

85. **M. Bounkhel** and M. Bachar, *Primal lower nice functions in reflexive smooth Banach spaces, ,* Mathematics, (2020), 8(11).

86. **M. Bounkhel** and M. Bachar, *V-Prox-regular functions in smooth Banach spaces,* Journal of Function spaces, Vol. 2020, Article ID 9465492, 8 pages.

87. **M. Bounkhel** and M. Bachar, *V-Proximal Trustworthy Banach spaces,* Journal of Function spaces, Vol. 2020, Article ID 4274160, 4 pages.

88. Dj. Bounekhel, **M. Bounkhel**, and M. Bachar, State dependent nonconvex sweeping processes in smooth Banch spaces, Portugal. Math. Vol. 77, Fasc. 2, 2020, 97-218.

89. **M. Bounkhel** and L. Tadj, and R. Hedjar, *Entrolpy Analysis of a Flexible Markovian Queue with Server Breakdowns,* Entropy, 2020, 22, 979.

90. Dj. Bounekhel, **M. Bounkhel**, and M. Bachar, Nonlinear differential variational inequalities with nonconvex sets in L_p spaces, Pacific journal of optimization Vol. 16 (4), 2020, 611-624.

91. M. Bachar, **M. Bounkhel** and S. Lazaiz, *Penot's Compacptness property in ultrametric spaces with an application,* Journal of Function spaces, Vol. 2021, Article ID 5542843, 6 pages.

92. M. Bachar, Mohamed A. Khamsi, and **M. Bounkhel,** *A mathematical model for the spread of COVID-19 and control mechanism is Saudi Arabia,* Advances in Difference Equations, Vol. 2021, 18 pages, https://doi.org/10.1186/s13662-021-03410-z.

93. **M. Bounkhel** and L. Tadj, and R. Hedjar, *Entrolpy maximization for the busy period of a single server queue,* Communications in statistics-Theory and Methods, April 2022, https://doi.org/10.1080/03610926.2022.2065301.

94. **M. Bounkhel**, *Generalized (f,\lambda)-projection operator on closed nonconvex sets and its applications in reflexive smooth Banach spaces.* AIMS Mathematics, 2023, 8(12): 29555-29568. doi: 10.3934/math.20231513.

95. **M. Bounkhel** and B. R. Al-sinan. *A differential equation approach for solving implicit state-dependent convex sweeping processes in Banach spaces.* AIMS Mathematics, 2024, 9(1): 2123-2136. doi: 10.3934/math.2024106.

96. **M. Bounkhel** and L. Tadj. *Model predictive control based integration of pricing and production planning.* AIMS Mathematics, 2024, 9(1): 2282-2307. doi: 10.3934/math.2024113.

1) Grants, Scholarships;

   a) Scholarship from Algerian Ministry of Higher Education and French Ministry of Higher Education, 01/09/1994-30/06/1995**.** (to prepare Master Degree)
   b) Scholarship from Algerian   Ministry of Higher Education and French Ministry of Higher Education 01/09/1995-30/06/1998. (to prepare Ph.D.).
   c) Research Projects as Principal investigator:
   1. Grant No. P115, 01/10/2010- 30/09/2012. " Modeling and simulation for all possible situations of crowd flows of pilgrims in the Holy Mosque in Makkah". Centre of Research Excellence in Hajj & Umrah (HajjCore), Hajj Research Institute, Umm Al-Qura University, Makkah Mukarramah, Saudi Arabia.
   2. Research project No. RSPD2023R1001, King Saud University 2023-Present.
   3. Research group project No. RGP-VPP-024, King Saud University 2011-2023.
   4. Research project: No. College of Science – Research center project No (Math/2008/37).
   5. Research project: No. College of Science-Research center project No (Math/2009/16).

 2) Employment History:

15/08/2001 – Present. King Saud University, College of Science, Department of Maths., Riyadh, Saudi Arabia.
01/09/1999-15/08/2001. Assistant professor, Center for Mathematical Modeling (CMM), Universidad de Chile, Santiago, Chile.
01/09/1998-01/09/1999. Tenure-track position, University of Montpellier 2, College of Science, Depart.   of Maths, Montpellier, France.
01/09/1995-01/09/1998. Lecturer Position, University of Montpellier 2, College of Science, Depart.   of Maths, Montpellier, France.

Participation in Conferences and Other Activities:

1) Participation in conferences:
   1. Conferences M. O. D. E., Poitiers University, Poitiers, France, March 18-21, 1998., *Tangential regularity of functions and set-valued mappings*.
   2. The 9th Belgian-French-German Conference on Optimization, Facultés Universitaires Notre-Dame de la paix Namur, Belgique, September 7-11, 1998. *Tangential regularity of set-valued mappings*.
   3. The 10th Italian-French-German Conference on Optimization, University of Montpellier II, Montpellier, France. September 4-8, 2000. *Tangential regularity of sets in non smooth analysis*.
   4. The 6th   meeting of Saudi Association for Mathematical Sciences, King Saud University, college of science, Riyad, Saudi Arabia, April 9-10,   2002. *First Order Perturbed Nonconvex Sweeping Process with delay*.
   5. The 7th   meeting of Saudi Association for Mathematical Sciences, Prince Sultan University, Riyad, Saudi Arabia,   2004. *Optimal control of a Production System with Inventory Level Dependent Demand.*
   6. Applied Mathematics Day (AMD)*,* King Fahd University (KFUPM), Dhahran, Saudi Arabia, April 9, 2006. *An existence result for a New Variant of the Nonconvex Sweeping Process*.
   7. First school on differential equations (EDO et EDA), Tipaza, Algérie. May 13-18, 2006. *Nonconvex Differential Inclusions* **(Invited Speaker).**
   8. Workshop on Mathematical Modeling of Dynamical Systems, King Abdulaziz City of Science & Technology (KACSST) , Riyadh, Saudi Arabia, April 29, 2007. Mode of Participation**: (Chairman of the organizing committee).**
   9. The sixth days of maths at UAE*,*   The petroleum institute, Abu Dhabi, UAE, April 25, 2008, *Existence and uniqueness of some variants of nonconvex sweeping processes*.
   10. *Third school on differential equations (EDO et EDA)*, Université Abdelhamid Ibn Badis, Mostaganem, Algérie. May 24-29, 2008. *Nonconvex Differential Inclusions and Nonconvex Variational Inequalities* **(Invited Speaker).**

11. International Conference on Mathematics and Modeling, Muscat, Oman, February 24-26-2009, *Applications of Nonsmooth Analysis to Nonconvex Differential Inclusions, Quasi-Variational Inequalities (QVI), Differential QVI, and Economic Problems.*
12. First Annual Maths Days of King Saud University (December 16-17, 2009), Dept. of Maths., Mode of Participation**: (Chairman of the organizing committee).**
13. The 8th meeting of Saudi Association for Mathematical Sciences, Al-Imam University, Riyadh, Saudi Arabia, March 23-24, 2011. *Modeling and simulation for all possible situations of crowd flows of pilgrims in the Holy Mosque in Makkah.* **(Invited Speaker)**
14. IFORS2011, 10-15th July, 2011, Melbourne, Australia. *Proximal Analysis in reflexive smooth Banach spaces.* **(Invited Speaker).**
15. NAOTA, International Conference on: Numerical Analysis and Optimization-Theory and Applications, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia, Dcember 18-19, 2011, *Proximal Analysis in Banach spaces and applications to minimization problems* **(Invited Speaker)**
16. SMD2012, Second Maths Days of King Saud University 2012, 14-15 March 2012, King Saud University, Riyadh, Saudi Arabia, **(Chairman of the organizing committee).**
17. Second Research Day of PSU 2012, 18 March 2012, Prince Sultan University, Riyadh, Saudi Arabia, *Mathematical Modeling and Numerical Simulations of: 1-Crowd flows at the holly mosque in Makkah, 2-Obstacle Avoidance of autonomous Mobile robots, and 3-Motion of nanoparticles in straight tubes.* **(Invited Speaker).**
18. Jordan Theory, Analysis and Related Topics 2012, April 30-May 4, 2012, Hong Kong. *Implicit Differential Inclusions in reflexive smooth Banach spaces* **(Invited Speaker).**
19. CMCGS 2014, 3rd Annual International Conference on Computational Mathematics, Computational Geometry & Statistics. 03-04/02/2014, Singapore, *Frechet and proximal Regularities of perturbed distance functions at points in the target set in Banach spaces* **(Invited Speaker).**
20. IFORS2014, 20th Conference of the international Federation of Operation Research Societies, Barcelona 2014, 13th-18th July 2014. *Iterative Methods for nonconvex equilibrium problems in Banach spaces* **(Invited Speaker).**
21. 2nd International Workshop on Maths. and Comp. Science, 01-02/12/2014, Tiaret, Algeria, *Nonsmooth Analysis and its Applications to two real life problems:* 1-*Crowd flows at the holly mosque in Makkah,* 2-*Obstacle avoidance of autonomous Mobile robots* **(Invited Speaker).**
22. I Brazilian Congress of Young Researchers in Pure and Applied Mathematics, 10-12/12/2014, Sao Paulo, Brazil, Directional Lipschitzness of minimal time functions in Hausdorff toplogical vector spaces .
23. The 9th International Conference on Nonlinear Analysis and Convex Analysis (NACA2015)-Chiang Rai, Thailand*, Iterative schemes for V-prox-regular equilibrium problems in Banach spaces* **(Invited Speaker).**
24. ORSC/EURO International Conference 2015 on Continuous Optimization, Shanghai, May 10-12, 2015. *Iterative schemes for quasi-variational inequalities with V-prox-regular data in Banach spaces.* **(Invited Speaker).**
25. SIAM Conference SIAM Conference on Applications of Dynamical Systems DS15, Snowbird, Utah, USA, May 17-21, 2015, *Moreau Sweeping Process on Banach Spaces.* **(Invited Speaker).**
26. The 10th International Conference on Nonlinear Analysis and Convex Analysis (NACA2017)-Chitose City Cultural Center Hokkaido (Chitose), Japan *, Generalised projections on closed nonconvex sets in Banach spaces and applications* **(Invited Speaker).**
27. The 5th Conference on Mathematical Sciences and Applications (CMSA), KAUST, Saudi Arabia, November 17-18,2021, *Applications of Non-Smooth Differential Inclusions to Real Life Problems* **(Invited Speaker).**

- Supervision of graduate students:

  1. **Tahar Haddad, Ph.D.,** Abbas Farhat University, Setif, Algeria, Title: Differential inclusions and Dynamic variational inequalities. Defended on July 2007.
  2. **Rabab Al-yusuf, Ph.D.**, King Saud University, Riyad, Title: Proximal Analysis in Banach Spaces, Defended 8th Match 2009.
  3. **Bushra Ridha Al-Sinan, Ph.D.**, King Saud University, Riyad, Title: Nonconvex Differential Inclusions in Banach spaces. Presentation expected in 25/11/2011.

4. **Bushra Ridha Al-Sinan, Master thesis**, King Saud University, Riyad, <u>Title</u>: Applications of Nonsmooth Analysis to Nonconvex Variational Inequalities and to Nonconvex Differential Inclusions. Defended in September 2005.
5. **Mariam Al-Touleb, Master thesis**, King Saud University, Riyad, <u>Title</u>: Applications of Nonsmooth Analysis to Nonconvex Equilibrium Problems. Defended in June 2007.
6. **Najah Mukbil Al-Shammari, Master thesis**, Hael University, Hael, <u>Title</u>: Nonconvex Differential Inclusions in Hilbert and Banach spaces. Defended on July 2012.
7. **Nada al-Farra**, **Master thesis**, King Saud University, Riyadh, <u>Title</u>: Applications of Optimal Control Theory, Currency Trading (Forex), Defended on July2010.

- <u>Theses examined</u>:

    1. **Mustapha Yarou** , "Problèmes d'évolutions gouvernés par le processus de rafle non convexe", **Ph.D.,** Constantine University, Algeria, Defended in 2003.
    2. **Dalila Laouir-Azzam** , "Contribution a l'étude de problémes d'évolutions du second ordre", **Ph.D.,** Constantine University, Algeria, Defended in 2003.
    3. **Haifa M. Al-Jebreen,** "Quasi-Linear Maps between Banach spaces and their applications", <u>**Ph.D**</u>, **King Saud** University, Riyad, Saudi Arabia, Defended in 2004<u>**.**</u>
    4. **Jumana Hussein Al-Safar,** "Bilinear and Sesquilinear Forms on Jordan Operator Algebras", <u>**Ph.D**</u>, **King Saud** University, Riyad, Saudi Arabia, Defended in 2007<u>**.**</u>
    5. **Adel Fahd Al-Rashidi ,** "Optimal Control of Production Inventory Systems with Deteriorating Items", <u>**Master Thesis**</u>**, King Saud** University, Riyad, Saudi Arabia, Defended in 2005.
    6. **Aisha Al-Omeir,** <u>**Master Thesis**</u>**,** King Faissal University, Saudi Arabia, Defended in 2009.
    7. **Tawfik Metwalii, PhD Thesis**, Al-Mansoura University, Al-Mansoura, Egypt, "Optimal of a rigid body motion without angular velocity measurements**",** Defended in 2011**.**

PART FOUR: TAUGHT COURSES

- **Math 555: Mathematical Programming,**
- **Math 523: Partial Differential Equations (II)**
- **Math 101: Introduction to Differential Calculus**
- **Math 104: General Mathematic (II)**
- **CSC 206: Introductory Programming with Visual QBasic**
- **Math 600: Master's Supervision**
- **Math 700: PhD's Supervision**
- **Math 580: Measure Theory (I)**
- **Math 105: Differential Calculus**
- **Math 681: Random Differential Equations**
- **Math 684: Distribution Theory**
- **Math 690: Advanced Topics in mathematics**
- **Math 687: Geometric Theory of functions**
- **Math 589: Selected Topics in Analysis**
- **Math 581: Functional Analysis (I)**
- **Math 583: Topological Vector Spaces**
- **Math 201: Differential and Integral Calculus**
- **Math 103: General Mathematic (I)**
- **Math 522: Partial Differential Equations (I)**
- **Math 589: Selected Topics in Analysis: (Nonsmooth Analysis)**
- **Math 690: Advanced Topics in mathematics: (Differential inclusions)**