Curriculum vitæ

Hassan Safouhi
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Present Positions

- Professor, Campus Saint-Jean, University of Alberta
- Adjunct Professor, Department of Mathematical & Statistical Sciences, University of Alberta

Education

- Ph.D. in applied mathematics, Blaise Pascal University, Clermont-Ferrand, France 1996–1999
- Diploma of Advanced Studies in Pure Mathematics, Caen University, Caen, France 1995–1996
- MSc in Applied Mathematics, Hassan II University, Casablanca, Morocco 1992–1994
- Analyst Programmer Diploma, École Française de l'Enseignement Technique, Morocco 1992–1994

Work Experience

- Professor of Mathematics, Campus Saint-Jean, University of Alberta 2008–
- Vice Dean - Academic & Operation, Campus Saint-Jean, University of Alberta August 2022– March 2025
- Associate Dean Academic, Campus Saint-Jean, University of Alberta August 2019– March 2020
- Associate Dean Research & Graduate Studies, Campus Saint-Jean, University of Alberta 2013–2016
- Associate Dean Research, Campus Saint-Jean, University of Alberta 2010–2013
- Founder and Director of Research-Apprentice Program at Campus Saint-Jean 2010-2016
- Scientific Director & Principal Organizer of the Alberta Meetings 2011–2012
  "The Alberta College Maths Conference & North South Dialogue in Mathematics"
- Scientific Director of the 2011 Summer Meeting of the Canadian Mathematical Society 2010–2011
- Peer Consultant in Teaching, University Teaching Service, University of Alberta 2003–2009
- Vice President of Association Francophone pour le Savoir, ACFAS Alberta 2004–2009
- Scientific Director & Principal Organizer of the International Conference 2006–2008
  "Odyssey of Mathematical and Computational Aspects of Molecular Structure Calculation"
- Associate Professor of Mathematics, Campus Saint-Jean, University of Alberta 2005–2008
- Assistant Professor of Mathematics, Campus Saint-Jean, University of Alberta 2001–2005
- Postdoctoral Fellow, Department of Mathematics, University of Quebec at Montreal 1999–2001
- Lecturer, Department of Mathematics, University of Caen, France 1996–1998

Committees National

- Member of the Board of Directors, The Canadian Mathematical Society 2011–2015
- Chair of the Endowment Grants Committee, The Canadian Mathematical Society 2008–2012
- Member of the Bilingualism Committee, The Canadian Mathematical Society 2008-2011
- Member of the Mathematics Scholarships and Fellowships Selection Committee 2004–2007
  Natural Sciences and Engineering Research Council of Canada

Committees UofA

- Killam Professorship Committee 2021–2023
- Killam Professorship Committee 2017–2020
- Representative of the University of Alberta for France-Canada Research Fund (FCRF) 2010–2016
- The University Research Policy Committee (URPC) 2010–2016
- The President's Research Awards Advisory Committee (PRAAC) 2010–2015
- The McCalla Professor Selection Committee 2010–2014

- ◇ The SSHRC Leaders Committee 2010–2016
- ◇ FGSR and Associate Deans Committee 2014–2016
- ◇ Faculty Ambassador, Undergraduate Research Initiative (URI) 2014–2018
- ◇ The Undergraduate Research Initiative (URI) Advisory Committee 2011–2014
- ◇ The NSERC Grant Assist Program 2014–2016
- ◇ ALES Adjudication Committee - Food and Health Initiative - Vitamin Fund 2010–2012
- ◇ Undergraduate Research Symposium Planning Committee 2011
- ◇ The Science Faculty Council, University of Alberta 2008–2010

Committees CSJ

- ◇ Equity, Diversity and Inclusion Committee 2020–2022
- ◇ Research and teaching awards and distinctions Committee 2020–2023
- ◇ Teaching and Learning Committee 2020–2023
- ◇ Chair of the Faculty Research Committee 2010–2016
- ◇ The Faculty Executive Committee 2010–2016
- ◇ Member of the Faculty Evaluation Committee 2014–2015
- ◇ Faculty Teaching and Learning Committee 2010–2015
- ◇ Faculté Saint-Jean Presidential Academic Review and Renewal Committee 2013–2014
- ◇ Council of the Institute of Canadian Studies 2011–2014
- ◇ Chair of the Faculty Evaluation Committee 2012–2013
- ◇ "Comité de Synthèse" 2010–2011
- ◇ Member of the Faculty Evaluation Committee (FEC) 2009–2011
- ◇ The Faculty Research Committee, Campus Saint-Jean 2006–2009
- ◇ Chair of the Excellence in Teaching Awards Committee 2005–2007
- ◇ The Faculty Nomination Committee, Campus Saint-Jean 2004–2006

Editorship

- ◇ Editor – *Advances in Numerical Analysis* 2011–
- ◇ Member of the Editorial Board – *Dataset Papers in Physical Chemistry* 2012–2015
- ◇ Member of the Editorial Board – *Abstract and Applied Analysis* 2010–2011
- ◇ Guest Editor, *International Journal of Quantum Chemistry* 2008–2009
  Proceedings of the International Conference *Odyssey 2008 – Alberta*

Research Interests

- ◇ Asymptotics and Collocation Methods
- ◇ Extrapolation methods
- ◇ Numerical Integration
- ◇ Mathematical Modeling and optimization
- ◇ Molecular Electronic Structure Calculations
- ◇ Nuclear Magnetic Resonance

Research Grants

- ◇ **Natural Sciences and Engineering Research Council of Canada (NSERC)**
  - ○ NSERC Discovery Grant - Individual 2018–2024, 132,000.00$
    Project : Analytical and numerical methods for slowly convergent integrals
  - ○ NSERC COVID 2020, 3,520.00$
    Project : Analytical and numerical methods for slowly convergent integrals
  - ○ NSERC Engage Grant 2016, 25,000.00$
    Project : Statistical machine learning for improving failure detection
  - ○ NSERC Discovery Grant - Individual 2011–2016, 75,000.00$
    Project : Extrapolation Methods and Sequence Transformations

- NSERC Discovery Grant - Individual — 2009–2011, 27,000.00$
  Project : Extrapolation Methods and Nonlinear Transformations for Applied Mathematics, Theoretical Chemistry and Molecular Physics
- NSERC Collaborative Research and Development Grant (CRD) – 33% — 2007–2010, 76,500.00$
  Project : Residential construction material waste minimization
  Co-applicants : Dr. Al Hussein (PI – 34%) and Dr. Bouferguene (33%)
- NSERC Discovery Grant - Individual — 2003–2008, 30,000.00$
  Project : Fast and accurate numerical evaluation of molecular integrals

◇ **Industrial Research Grants**

- Industrial Contribution to NSERC Engage — 2016, 48,000.00$
  Optimum Instruments Inc.
  Project : Statistical machine learning for improving failure detection
- Landmark Master Builder - Collaborative Research – 33% — 2007–2010, 90,000.00$
  Project : Residential construction material waste minimization
  Co-applicants : Dr. Al Hussein (PI – 34%) and Dr. Bouferguene (33%)
- MITACS Inc. - Collaborative Research – 33% — 2007–2010, 45,000.00$
  Project : Residential construction material waste minimization
  Co-Applicants : Dr. Al Hussein (PI – 34%) and Dr. Bouferguene (33%)

◇ **External Research Grants for Community Based Research Projects**

- Fonds du Secrétariat Francophone — 2015–2016, 50,000.00$
  Secrétariat Francophone
  Project : Modèle transitionnel en littératie et compétences essentielles chez les adultes francophones d'Edmonton.
- Human Resources and Skills Development Canada — 2012–2014, 25,0000.00$
  Office of the Information Commissioner of Canada
  Project : Towards an Integrated Model to support the literacy development and essential skills of military families
- Presidential Fund for Innovation and Development, Collaborative Research — 2007–2008, 25,000.00$
  Project : Impacts Politiques et Sociaux de la Recherche Canadienne en Sciences Humaines.

◇ **UofA Funding**

- Teaching and Learning Enhancement (TLEF) Fund – Co-Applicant — 2011–2014, 90,228.00$
  Project : Mathematical Suite foir Moodle (MSM)
  Co-Applicants : Dr. Ipperciel, Dr. Moore, Dr. Peschke
- Special Capital Equipment Fund — 2002–2005, 12,450.00$
  Projet : The development of ab initio software for molecular integrals.

◇ **External Grants for Scientific Events**

- Pacific Institute of the Mathematical Sciences – Co-Applicant — 2013–2014, 4,500.00$
  Project : The North & South Dialogue in Mathematics 2014
- Alberta Innovates - Conference Funds – Co-Applicant — 2013–2014, 4,000.00$
  Project : The North & South Dialogue in Mathematics 2014
- Pacific Institute of the Mathematical Sciences – Co-Applicant — 2012–2013, 8,500.00$
  Project : The North & South Dialogue in Mathematics 2013
- Alberta Innovates - Conference Funds – Co-Applicant — 2012–2013, 4,000.00$
  Project : The North & South Dialogue in Mathematics 2013
- Pacific Institute of the Mathematical Sciences — 2011–2012, 4,000.00$

Project : The North & South Dialogue in Mathematics 2012

- University Conference Fund 2011–2012, 3,000.00$
  Project : The North & South Dialogue in Mathematics 2012
- Alberta Advanced Education and Technology 2008–2009, 7,500.00$
  Project : The International Conference *The Odyssey 2008*
- University Conference Fund 2008–2009, 2,250.00$
  Project : The International Conference *The Odyssey 2008*

Research Supervision

◇ Postdoctoral Fellows (2)

Name	Year	Project	Present Position
Temga Temga	2008–2010	Analytical and numerical treatment of magnetic properties of molecules	Petroleum Field Specialist Engineering Seismology Group Canada Inc.
John Fofanah (Co-supervision)	2007–2008	Management of the infrastructure and quality of life assessment in war torn third world countries	Professional Engineer & Project Management Allegheny Energy, Pittsburgh USA

◇ Ph.D Students (8)

Name	Year	Department	Project	Present Position
Safaa Elgharbi	2016–2021	Depart Math & Fac. Sciences Univ. Mohammed V Rabat	Méthodes Sinc exponentielles doubles, Méthodes de Lanczos par blocset globale et applications	PhD Student
Philippe Gaudreau	2013–2016	Depart Math & Stat Sciences UofA	Sinc Collocation Methods for Solving Quantum Mechanical Problems	Fellowship The Data Incubator
Richard Slevinsky	2011–2014	Depart Math & Stat Sciences	Techniques in numerical Integration	Assistant Professor Univ. Manitoba
Don Mah (Co-supervision)	2006–2010	Depart. Civil & Environ. Engineering, UofA	Residential Construction Material Waste Minimization	Professional Engineer & Chair of the Construction Programs, NAIT
Samira Elbaroudi (Co-supervision)	2006–2009	Université Chouaïb Doukkali Morocco	Molecular quantum similarity measurements and applications	Unknown
Vishal Sharma (Co-supervision)	2004–2009	Depart. Civil & Environ. Engineering, UofA	Levels of Service (LOS) Optimization using multi-objective decision-making	Professional Engineer & Faculty Instructor NAIT
John Fofanah (Co-supervision)	2003–2007	Depart. Civil & Environ. Engineering, UofA	Management of infrastructure and quality of life assessment in war torn third world countries. The case of Sierra Leone.	Professional Engineer & Project Management Allegheny Energy Pittsburgh USA
Lilian Berlu (Co-supervision)	2001–2003	Université Blaise Pascal France	Development of software package for the evaluation of molecular integrals	Researcher Commissariat à l'Énergie Atomique (CEA), France

◇ **Master Students (9)**

Name	Year	Department	Project	Present Position
Jordan Lovrod (NSERC COVID)	2021	CSJ	Analytical and numerical methods for integration	MSc student UBC
Ayoub El-kfita	2016–2018	Depart Math & Fac. Sciences Univ. Mohammed V	Méthodes numériques, d'intégration	
Philippe Gaudreau	2012–2013	Depart Math & Stat Sciences UofA	Asymptotic Expansion for Energy Eigenvalues for Anharmonic Oscillators	Fellowship The Data Incubator
Richard Slevinsky	2009–2011	Depart Math & Stat Sciences UofA	Generalized transformations for numerical integration of oscillatory integrals	Assistant Professor Depart. Math Univ. Manitoba
Brahim Sabghane (Co-supervision)	2009–2010	Univ. Hassan II Morocco	Extrapolation methods for slowly convergent series	Unknown
Mohammed Mouattamid (Co-supervision)	2008–2010	Depart. Civil & Environ. Engineering, UofA	Industrial site-layout optimization utilizing multiple cranes	Engineering Analyst Enbridge Inc.
Khaled Kattan (Co-supervision)	2008–2010	Depart. Civil & Environ. Engineering, UofA	3D modeling approach for the automation of construction operations	Project Manager Trans-Northern Pipelines Inc.
Hasan Shafiul (Co-supervision)	2008–2010	Depart. Civil & Environ. Engineering, UofA	Interactive and dynamic integrated module for lmobile cranes supporting	Project Engineer Mamoet Canada Western Ltd
Aziz Tariq (Co-supervision)	2008–2010	Depart. Civil & Environ. Engineering, UofA	Cast-in-place steel fiber reinforced concrete liner design for pressurize tunnel constructability perspective	Professional Engineer & Construction Project Manager The City of Edmonton

◇ **Undergraduate Research Students (30)**

Name	Year	Department	Project	Present Position
Gurkarmjot Singh (NSERC USRA)	2021	Fac. Eng.	Computation of NMR properties	Fac. Engineering UofA
Jordan Lovrod (NSERC USRA)	2020	CSJ	Computation of Incomplete Bessel functions	BSc student UofA
Hannah Tellumbura (NSERC USRA)	2020	CSJ	Computation of highly oscillatory integrals	Fac. Engineering UofA
Jordan Lovrod (NSERC USRA)	2019	CSJ	Numerical integration for oscillatory integrals	BSc student UofA
Guojun Ma	2019	Depart Math & Stat Sciences	Numerical Quadrature in Finance	BSc student UofA
Jordan Lovrod (NSERC USRA)	2018	CSJ	Numerical integration for oscillatory integrals	BSc student UofA
Tyler Lund	2018	CSJ	Exponential technologies	Fac. Engineering UofA

Émelie El-Hage (NSERC USRA)	2016	CSJ	Cancer metabolism	Pharmacy student UofA
Etienne Vincent	2016	CSJ	Cancer metabolism	BSc student, UofA
Fatima Davelouis	2016	Depart Math & Stat Sciences	Sinc collocation methods and applications	BSc student UofA
Patricia Gomez (Roger Smith)	2016 2015	CSJ	Essential Competencies in Math education	Teacher Elementary School
Nan Yuesong (UAI)	2016	International Student. China	Julia Programming for molecular integrals	Grad Student China
Kaylin Bechard (NSERC USRA)	2015	CSJ	Modern tools in numerical integration	UofA Employee
Tyler Cassidy (NSERC USRA)	2015	Depart Math & Stat Sciences	Computing eigenvalues of coulombic potentials	Graduate Student McGill Univ.
Michelle Sullivan	2015	CSJ	Numerical treatment of molecular NMR properties	BSc Student UofA
Tyler Cassidy (NSERC USRA)	2014	CSJ	Computing eigenvalues of coulombic potentials	Graduate student McGill Univ
Bria Kindersley (NSERC USRA)	2013	CSJ	A Model for Measuring Essential Competencies	Developer. PNI Digital Media Ltd.
Philippe Gaudreau (NSERC USRA)	2012 2011	CSJ	Tails of probability distributions	Fellowship The Data Incubator
Kartik Vasudev	2012 2011	Enginneering Physics, UofA	NMR properties of molecular systmes	Graduat student Fac. Engineering
Bria Kindersley (NSERC USRA)	2012	CSJ	Clenshaw-Curtis quadrature method	Developer. PNI Digital Media Ltd.
Pranai Vasudev	2011 2010	CSJ	Nuclear magnetic resonance of molecular systems	Graduat student UofT
Richard Slevinsky (NSERC USRA)	2009	Enginneering Physics, UofA	Algorithms for of the G transformations	Assistant Professor Univ. Manitoba
Currie Lewis (STE Funding)	2008	CSJ	Connecting applied mathematics to biology	Family Doctor
Richard Slevinsky (NSERC USRA)	2008 2007	Enginneering Physics, UofA	Extrapolation methods for the Twisted tail	Assistant Professor Univ. Manitoba
Chad Krayenhoff (Roger Smith)	2007	CSJ	Technology in secondary level mathematics	Teacher - Jasper Junior High School
Khaled Kattan (STEP)	2007 2006	CSJ	Symbolic programming language in mathematics	Project Manager. Trans-Northern Pipelines Inc.
Stefan Duret (NSERC USRA)	2006 2005	Enginneering Physics, UofA	The WD and SD transformations	Entrepreneur
Nathan Linfoot	2006	CSJ	Overlap-like quantum similarity integrals	Unknown
Pierre Muhie	2006	CSJ	Symbolic programming language in mathematics	Economist
Paulina Stroemich	2005	Enginneering Physics, UofA	Symbolic programming language in mathematics	Substation Engineer Epcor

Reviewer

- ◇ *Numerical Algorithms*
- ◇ *Applied Numerical Mathematics*
- ◇ *Journal of Computational Applied Mathematics*
- ◇ *Journal of Physics A : Mathematical and Theoretical*
- ◇ *Journal of Computational Physics*
- ◇ *Journal of Computational Chemistry*
- ◇ *Canadian Journal of Physics*
- ◇ *Journal of Molecular Modeling*
- ◇ *Journal of Physical Chemistry*

Courses Taught

- ◇ Analysis – 1st year course (France)
- ◇ General Mathematics – 1st year course (France)
- ◇ Calculus I & II for Engineering – MATHQ 100 & 101
- ◇ Calculus I & II – MATHQ 113 & 115
- ◇ Linear Algebra for Engineering – MATHQ 102
- ◇ Differential Equations for Engineering – MATHQ 201
- ◇ Introduction to Differential Equations – MATHQ 334
- ◇ Partial Differential Equations – MATHQ 337
- ◇ Mathematical Modelling – Math 372
- ◇ Techniques in Applied Mathematics – MATH 538
- ◇ Operation Research – CIV E 605
- ◇ Advanced Mathematics for Engineers – CIV E 709

Honors & Awards

- ◇ Killam Professorship Award, University of Alberta — 2017-2018
- ◇ Graduate Student Supervisor Award, Graduate Students' Association, University of Alberta — 2014
- ◇ Rutherford Award for Excellence in Undergraduate Teaching, University of Alberta — 2012
- ◇ Best Paper Award in Computing, Education and Research — 2009
  American Society of Civil Engineering. The 2009 Construction Research Congress
- ◇ Nominated Expert in Applied Mathematics — 2009
  Nomination by AUF (Agence universitaire de la Francophonie)
- ◇ Award for Excellence in Teaching, Campus Saint-Jean, University of Alberta — 2004 and 2008
- ◇ Award for Excellence in Research, Campus Saint-Jean, University of Alberta — 2004, 2005 and 2007
- ◇ McCalla Research Professorship, University of Alberta — 2006
- ◇ Award for young researchers, Clermont-Ferrand & Blaise Pascal University, France — 1999
- ◇ Award for Excellence, École Française de l'Enseignement Technique — 1994

Publications

- ◇ **Articles published in refereed journals (graduates students in blue ; undergraduates in red)**

1. M. Slevinsky and H. Safouhi. A recursive algorithm for an efficient and accurate computation of incomplete Bessel functions. *Numerical Algorithms*, Accepted, 2022.
2. S. Elgharbi, M. Essaouini, B. Abouzaid, S. El Hajji and H. Safouhi. Energy eigenvalues of the three-dimensional Schrödinger equation using double exponential Sinc collocation method. *IEEE*, Accepted, 2022.
3. M. Slevinsky and H. Safouhi. Compact Formulae for Three-Center Nuclear Attraction Integrals Over Exponential Type Functions. *Journal of Mathematical Chemistry*, Accepted, 2022.
4. S. Elgharbi, M. Essaouini, B. Abouzaid, S. El Hajji and H. Safouhi. Double exponential Sinc numerical methods for the two-dimensional time-independent Schrödinger equation. *Molecular Physics*, 119, 10, 1–14, 2021.

5. J. Lovrod and H. Safouhi. Computing four-center two-electron Coulomb integrals using exponential transformations and trapezoidal rule. *European Physical Journal*, 226, 01009 (1–8), 2020.
6. B. Abouzaid, M. Essaouini and H. Safouhi. One-center nonrelativistic integrals of second order for the NMR shielding tensor. *Annals of the University of Craiova, Mathematics and Computer Science Series*, 47, 1, 54–66, 2020.
7. M. Essaouini, B. Abouzaid, P. Gaudreau, and H. Safouhi. Computation of energy eigenvalues of the anharmonic coulombic potential with irregular singularities. *Numer. Algor.*, 84, 1397–1409, 2020.
8. J. Lovrod and H. Safouhi. Double exponential transformation for computing three-center nuclear attraction integrals. *Molecular Physics*, 118, 4, 2019.
9. T. Cassidy, P. Gaudreau, and H. Safouhi. On the Computation of Eigenvalues of the Anharmonic Coulombic Potential. *Journal of Mathematical Chemistry*, 56, 477–492, 2018.
10. H. Safouhi. A generalized technique in numerical integration. *European Physical Journal*, 173, 01011 (1–8), 2018.
11. P. Gaudreau and H. Safouhi. A Numerical Treatment of Energy Eigenvalues of Harmonic Oscillators Perturbed by a Rational Function. *Journal of Mathematical Physics*, 58, 101509 (1–14), 2017.
12. P. Gaudreau and H. Safouhi. Centrosymmetric Matrices in the Sinc Collocation Method for Sturm-Liouville Problems. *European Physical Journal*, 108, 01004 (1–12), 2016.
13. P. Gaudreau, R. Slevinsky and H. Safouhi. The Double Exponential Sinc Collocation Method for Singular Sturm-Liouville Problems. *Journal of Mathematical Physics*, 57, 043505 (1–19), 2016.
14. P. Gaudreau, R. Slevinsky and H. Safouhi. Computing Energy Eigenvalues of Anharmonic Oscillators using the Double Exponential Sinc collocation Method. *Annals of Physics.*, 360, 520–538, 2015.
15. P. Gaudreau, K. Hayami, Y. Aoki, H. Safouhi and A. Konagaya. Improvements to the Cluster Newton Method for an Underdetermined Inverse Problem. *Journal of Applied and Computational Mathematics.*, 283, 122–141, 2015.
16. M. Slevinsky and H. Safouhi. Useful Properties of the Coefficients of the Slevinsky-Safouhi Formula for Differentiation. *Numer. Algor.*, 66, 457–477, 2014.
17. P. Gaudreau, R. Slevinsky and H. Safouhi. An Asymptotic Expansion for Energy Eigenvalues for Anharmonic Oscillators. *Annals of Physics.*, 337, 261–277, 2013.
18. M. Slevinsky and H. Safouhi. A comparative numerical study of numerical steepest descent, extrapolation methods and sequence transformations in computing semi-infinite integrals. *Numer. Algor.*, 60, 2, 315–337, 2012.
19. P. Gaudreau, R. Slevinsky and H. Safouhi. Computation of tail probability distributions via extrapolation methods and connection with rational and Padé approximants. *SIAM J. Sci. Comput.*, 34, B65–B85, 2012.
20. H. Safouhi, M. Mouattamid, U. Hermann and A. Hendi. An algorithm for the calculation of feasible mobile crane position areas. *Automation in Construction*, 20, 360–367, 2011.
21. J. D. Manrique, M. Al-Hussein, A. Bouferguene, H. Safouhi and R. Nasseri. Combinatorial algorithm for optimizing wood wast in framing designs. *ASCE J. Construct. Eng. Manag.*, 137, 188–197, 2011.
22. H. Safouhi. Integrals of the paramagnetic contribution in the relativistic calculation of the shielding tensor. *J. Math. Chem.*, 48, 601–616, 2010.
23. M. Slevinsky and H. Safouhi. A Recursive algorithm for the G transformation and accurate computation of incomplete Bessel functions. *App. Num. Math.*, 60, 1411–1417, 2010.
24. R. Slevinsky, T. Temga, M. Mouattamid and H. Safouhi. One- and two-center ETF-integrals of first order in relativistic calculation of NMR parameters. *J. Phys. A : Math. Theor.*, 43, 225202 (14pp), 2010.
25. H. Safouhi. Bessel, sine and cosine functions and extrapolation methods for computing molecular multicenter integrals. *Numer. Algor.*, 54, 141–167, 2010.
26. H. Shafiul, M. Al-Hussein, U. Hermann and H. Safouhi. Interactive and dynamic integrated module for mobile cranes supporting system design. *ASCE J. Construct. Eng. Manag.*, 136, 179–186, 2010.
27. M. Slevinsky and H. Safouhi. New Formulae for Higher Order Derivatives and Applications. *J. Comput. App. Math.*, 2, 405–419, 2009.

28. H. Safouhi. Erratum and Answer to the comment by Harris on : Numerical treatment of two-center overlap integrals (J. Mol. Mod., 12, 213–220, 2006). *J. Mol. Model.*, 15, 1541-1543, 2009.
29. M. Slevinsky and H. Safouhi. The S and G transformations for computing three-center nuclear attraction integrals. *Int. J. Quantum Chem.*, 109, 1741–1747, 2009.
30. M. Slevinsky and H. Safouhi. Numerical Treatment of a Twisted Tail using Extrapolation Methods. *Numer. Algor.*, 48, 301 - 316, 2008.
31. L. Berlu and H. Safouhi. Analytical treatment of nuclear magnetic shielding tensor integrals over exponential type functions. *J. Theor. Comput. Chem.*, 7, 1215–1225, 2008.
32. S. Duret, A. Bouferguene and H. Safouhi. Strategies for an efficient implementation of the Gauss-Bessel quadrature for the evaluation of multicenter integral over STFs. *J. Comput. Chem.*, 29, 6, 934–944, 2008.
33. V. Sharma, M. Al-Hussein, H. Safouhi and A. Bouferguene. Municipal infrastructure asset levels of service assessment for investment decisions using analytic hierarchy process. *ASCE J. Infrastruct. Sys.*, 14, 3, 193–200, 2008.
34. S. Duret and H. Safouhi. The W algorithm and the $\bar{D}$ transformation for the numerical evaluation of three-center nuclear attraction integrals. *Int. J. Quantum Chem.*, 107, 1060–1066, 2007.
35. H. Safouhi and A. Bouferguene. Nonlinear transformation methods for accelerating the convergence of Coulomb integrals over exponential type functions. *Theor. Chem. Acc.*, 117, 183–332, 2007.
36. J. B. Fofanah, M. Al-Hussein, H. Safouhi and A. Bouferguene. Postwar reconstruction : sustainability approach using hamming distance and analytic hierarchy process concepts. A case study of Sierra Leone, *Int. J. Environ. Cult. Econ. Soc. Sustain.*, 3, 1, 28–41, 2007.
37. A. Bouferguene and H. Safouhi. The Gauss-Bessel quadrature : A tool for the evaluation of Barnett-Coulson/Lowdin functions. *Int. J. Quantum Chem.*, 106, 2398–2407, 2006.
38. H. Safouhi. Numerical treatment of two-center overlap integrals. *J. Mol. Model.*, 12, 213–220, 2006.
39. H. Safouhi. Analytical and numerical development for the two-center overlap-like quantum similarity integrals over Slater type functions. *J. Phys. A. : Math. Gen.*, 38, 7341–7361, 2005.
40. H. Safouhi and A. Bouferguene. Extrapolation methods for improving convergence of spherical Bessel integrals for the two-center Coulomb integrals. *Int. J. Quantum Chem.*, 106, 2318–2323, 2006.
41. A. Bouferguene and H. Safouhi. An Efficient method for computing NMR spectral densities involving Kohlrausch/Williams-Watts decay function. *Int. Elect. J. Mol. Des.*, 5, 201–212, 2006.
42. H. Safouhi and L. Berlu. The Fourier transform method and the $S\bar{D}$ approach for the analytical and numerical treatment of multicenter overlap-like quantum similarity integrals. *J. Comp. Phys.*, 216, 19–36, 2006.
43. A. Bouferguene and H. Safouhi. A complexity analysis of the Gauss-Bessel quadrature as applied to the evaluation of multi-centre integrals over STFs. *J. Phys. A. : Math. Gen.*, 39, 499–511, 2006.
44. H. Safouhi and A. Bouferguene. The symbolic programming language in molecular multicenter integral problem. *Int. J. Quantum Chem.*, 106, 65–78, 2006.
45. A. Bouferguene and H. Safouhi. Polynomial approximates of Boys function using the Lanczos Tau method. *Recent Res. Devel. Quantum Chem.*, 5, 1–13, 2006.
46. L. Berlu and H. Safouhi. Analytical development of multicenter overlap-like quantum similarity integrals over Slater type functions and numerical evaluation. *J. Theor. Comput. Chem.*, 4, 787–801, 2005.
47. A. Bouferguene and H. Safouhi. Use of Lanczos Tau method to derive polynomial approximate from the addition theorem of Slater type orbitals. *Int. Elect. J. Mol. Des.*, 4, 527–536, 2005.
48. H. Safouhi. Highly accurate numerical results for three-center nuclear attraction and two-electron Coulomb and exchange integrals over Slater type functions. *Int. J. Quantum Chem.*, 100, 172–183, 2004.
49. H. Safouhi and L. Berlu . Molecular three-center electronic integrals over Slater type orbitals evaluated using nonlinear transformations. *Int. Elect. J. Mol. Des.*, 3, 83–92, 2004.
50. L. Berlu and H. Safouhi. Multicenter two-electron Coulomb and exchange integrals over Slater functions evaluated using a generalized algorithm based on nonlinear transformations. *J. Phys. A. : Math. Gen.*, 37, 3393–3410, 2004.

51. L. Berlu, H. Safouhi and P. Hoggan. Fast and accurate evaluation of three-center two-electron Coulomb, hybrid and three-center nuclear attraction integrals over Slater type orbitals using the $S\bar{D}$ transformation. *Int. J. Quantum Chem.*, 99, 221–235, 2004.
52. L. Berlu and H. Safouhi. A new algorithm for accurate and fast numerical evaluation of hybrid and three-center two-electron Coulomb integrals over Slater type functions. *J. Phys. A. : Math. Gen.*, 36, 11267–11283, 2003.
53. L. Berlu and H. Safouhi. An extremely efficient and rapid algorithm for a numerical evaluation of three-center nuclear attraction integrals over Slater type functions. *J. Phys. A. : Math. Gen.*, 36, 11791–11805, 2003.
54. H. Safouhi and P. E. Hoggan. Nonlinear transformation methods for improving convergence of molecular electronic integrals over exponential type orbitals. *Mol. Phys.*, 101, 19–31, 2003.
55. H. Safouhi. Convergence properties of the $S\bar{D}$ transformation and a fast and accurate numerical evaluation of molecular integrals. *J. Phys. A. : Math. Gen.*, 35, 9685–9698, 2002.
56. H. Safouhi and P. E. Hoggan. Three-center nuclear attraction, three-center two-electron Coulomb and hybrid integrals over B functions evaluated using the nonlinear $S\bar{D}$ transformation. *Int. J. Quantum Chem.*, 119–135, 2002.
57. H. Safouhi. Efficient and rapid numerical evaluation of the two-electron four-center Coulomb integrals using nonlinear transformations and practical properties of sine and Bessel functions. *J. Comput. Phys.*, 176, 1–19, 2002.
58. H. Safouhi and P. E. Hoggan. Recent progress in the accurate and rapid evaluation of all Coulomb integrals over Slater type orbitals. *Int. J. Quantum Chem.*, 84, 580–591, 2001.
59. H. Safouhi. An extremely efficient approach for accurate and rapid evaluation of three-centre two-electron Coulomb and hybrid integrals over B functions. *J. Phys. A. : Math. Gen.*, 34, 881–902, 2001.
60. H. Safouhi. Properties of the sine, spherical Bessel and reduced Bessel functions for improving convergence of semi-infinite very oscillatory integrals : The evaluation of three-centre nuclear attraction integrals over B functions. *J. Phys. A. : Math. Gen.*, 34, 2801–2818, 2001.
61. H. Safouhi. Numerical evaluation of three-center two-electron Coulomb and hybrid integrals over B functions using the HD and $H\bar{D}$ methods and convergence properties. *J. Math. Chem.*, 29, 213–232, 2001.
62. H. Safouhi. The HD and $H\bar{D}$ methods for accelerating the convergence of three-center nuclear attraction and four-center two-electron integrals over B functions and their convergence properties. *J. Comput. Phys.*, 165, 473–495, 2000.
63. H. Safouhi and P. E. Hoggan. New method of rapid and accurate evaluation for multicenter bielectronic integrals over B functions. *Int. J. Quantum Chem.*, 80, 236–248, 2000.
64. H. Safouhi and P. E. Hoggan. Non-linear transformations for rapid and efficient evaluation of multicenter bielectronic integrals over B functions. *J. Math. Chem.*, 25, 259–280, 1999.
65. H. Safouhi and P. E. Hoggan. Three-centre two electron Coulomb and hybrid integrals evaluated using nonlinear D- and $\bar{D}$-transformations. *J. Phys. A. : Math. Gen.*, 32, 6203–6217, 1999.
66. H. Safouhi and P. E. Hoggan. Efficient and rapid evaluation of three-center two electron Coulomb and hybrid integrals using nonlinear transformations. *J. Comput. Phys.*, 155, 331–347, 1999.
67. H. Safouhi and P. E. Hoggan. Efficient evaluation of Coulomb integrals : the nonlinear D- and $\bar{D}$-transformations. *J. Phys. A. : Math. Gen.*, 31, 8941–8951, 1998.
68. H. Safouhi, D. Pinchon and P. E. Hoggan. Efficient evaluation of integrals for density functional theory : the nonlinear D-transformations to evaluate three-center nuclear attraction integrals over B functions. *Int. J. Quantum Chem.*, 70, 181–188, 1998.

◇ **Articles published in refereed conference proceedings**

1. H. Shafiul, M. Al-Hussein, U. R. Hermann and H. Safouhi. An automated system for mobile crane selection, swing control and ground pressure calculation. *Proceedings of the Twelfth International Conference on Civil, Structural and Environmental Engineering Computing*, 1–14, 2009.

2. J. D. Manrique, M. Al-Hussein, A. Bouferguene, H. Safouhi and R. Nasseri. Automation of construction drawings and waste minimization for stick-frame constructions based on the I^3 concept. *Proceedings of the 2008 CSCE Conference*, 1, 398–406, 2008.
3. H. Shafiul, M. Al-Hussein, U. R. Hermann and H. Safouhi. Integrated module for mobile crane dynamic instability analysis and supporting system design. *ASCE Proceedings of the 2009 Construction Research Congress*, 386–395, 2009.
4. V. Sharma, M. Al-Hussein and H. Safouhi. Interactive 3D-based decision support system for municipal infrastructure investment : A framework. *Proceedings of the 2007 CSCE Conference*, 2, 1211–1222, 2007.
5. H. Safouhi and A. Bouferguene. Numerical evaluation of two-center overlap integrals over Slater-type orbitals and convergence properties. *Int. Elect. J. Mol. Des.*, 4, 413–422, 2005.
6. H. Safouhi and L. Berlu. Convergence improvement of two-electron four-center Coulomb and exchange integrals over Slater type orbitals. *Int. Elect. J. Mol. Des.*, 3, 728–736, 2004.
7. H. Safouhi. Three-center nuclear attraction integrals for density functional theory and nonlinear transformations. *Lec. Notes. Comput. Sciences*, II, 280–289, 2004.

◇ Collections

1. *Odyssey of Mathematical and Computational Aspects of Molecular Electronic Structure Calculations*. Edited by Hassan Safouhi, Volume 109, Issue 8 (Pages 1617–1765), Wiley, 2009.
ISSN : 0020-7608.

◇ Book Chapters

1. H. Safouhi. *Chapter title : Fourier Transformation Method for Computing NMR integrals over Exponential Type Functions. Fourier Transform.* Salih Mohammed Salih (Editor), 2012. ISBN : 979-953-307-869-3.
2. H. Safouhi and A. Bouferguene. *Chapter title : Computational Chemistry. Book title : Scientific Data Mining and Knowledge Discovery : Principles and Foundations.* Springer Verlag, Mohamed Medhat Gaber (Editor), 2010. ISBN : 978-3-642-02787-1.
3. R. Ghomari, A. Rebabti, A. Bouferguene and H. Safouhi. *Chapter title : Addition Theorems for Multi-Center Integrals over Exponential Type Functions. Book title : Handbook of Computational Chemistry Research.* NOVA, C. T. Collett and C. D. Robson (Editors), 2010. ISBN : 978-1-60741-047-8.

◇ Technical Report

1. P. Gaudreau, K. Hayami, Y. Aoki, H. Safouhi and A. Konagaya. Improvements to the Cluster Newton Method for Underdetermined Inverse Problems. *National Institute of Informatics NII Technical Report*, NII-2013-002E, 1-28, 2014.

◇ Editorial Work

1. H. Shafiul, M. Al-Hussein, U. R. Hermann and H. Safouhi. Mobile crane dynamics stability analysis, page 21. *Science – Winter 2009-2010.*
2. H. Safouhi and E. J. Weniger. Introduction for the Proceedings of the International Conference "Mathematical and Computational Aspects of Molecular Electronic Structure Calculations". *International Journal of Quantum Chemistry*, 109, 1617, 2009.