

CURRICULUM VITAE OF PROF Juma SHABANI

(Updated on 17th February 2020)



IDENTITY

Name and surname: Professor Juma Shabani

Place and date of birth: Bujumbura, Burundi, May 25, 1952

Marital status: married with 4 children

Nationality: Burundian

CURRENT INSTITUTIONAL AFFILIATION

- i). President of the Burundi National Commission for higher education;
- ii). President of the Burundi National Academy of Sciences and technology;
- iii). Professor of Theoretical and Mathematical Physics, Department of Mathematics, University of Burundi;
- iv). Director of the University of Burundi doctoral School;

ACADEMIC RECORDS

- i) 1973-1978: Master of Science in Mathematics, State University of Kharkov, Former Soviet Union;
- ii) 1980-1982: Master of Science in Physics, Catholic University of Louvain, Belgium;
- iv) 1982-1986: PhD in Mathematical Physics, Catholic University of Louvain, Belgium.

CAREER

I held several senior positions at national, regional and international levels. These include:

- i) October 2013- May 2014: Director (Level D1) in the Education sector, UNESCO Headquarters in Paris, Responsible for Development, Coordination and Monitoring of UNESCO's programs on higher education with a special focus on Africa;

ii). September 2007 – October 2013: Director of the UNESCO Bamako Cluster Office in Mali, and UNESCO Representative to Mali, Burkina Faso, Niger, Guinea and the Commission of the West African Economic and Monetary Union (in its French acronym UEMOA);

iii) August 2002 - September 2007: Director of the UNESCO Harare Cluster Office in Zimbabwe, and UNESCO Representative to Zimbabwe, Botswana, Malawi, Zambia, the Southern African Development Community (SADC) and the Common Market for Eastern and Southern Africa (COMESA);

iv) August 1997- August 2002: Senior Specialist for Higher Education in Africa at the UNESCO Regional Bureau for Education in Africa (BREDA), based in Dakar, Senegal;

v) August 1996-August 1997: Senior Specialist for Higher Education for Eastern and Southern Africa at the UNESCO Regional Office for Science and Technology in Africa (ROSTA), based in Nairobi, Kenya;

vi) September 1992 - August 1996: Deputy Secretary General of the Association of African Universities, Accra, Ghana;

vii) January 1988 - September 1992: Vice Rector of the University of Burundi;

viii) September 1978 - September 1992: Lecturer, Senior Lecturer and Associate Professor of mathematics and mathematical physics at the University of Burundi. Visiting Professor/Researcher and External Examiner at several universities and research centres including: Catholic University of Louvain (Belgium), Karl Marx University of Leipzig (Democratic Republic of Germany), University of Bielefeld (Federal Republic of Germany), International Centre for Theoretical Physics, Trieste (Italy), National University of Rwanda, National University of Benin, University of Dakar, University of Addis Ababa (Ethiopia) and Maseno University (Kenya).

SUPERVISION OF DOCTORAL THESES

1. Mathias Hounkpe, 1996

Institut de Mathématiques et de Sciences Physiques
Université nationale du Bénin
Théorie de la diffusion pour les interactions delta-sphériques

2. Alfred Vyabandi, 2001

Institut de Mathématiques et de Sciences Physiques
Université nationale du Bénin
Modèles à deux paramètres d'interactions ponctuelles et sphériques en mécanique quantique
3. Currently I am supervising 8 PhD students at the Lagos State University in Nigeria and the Doctoral School of the University of Burundi

A. CONTRIBUTION TO SCIENCE

A.1. DIRECT CONTRIBUTION TO THE ADVANCEMENT OF SCIENCE

I have made major contributions in three areas of mathematics and theoretical physics that have advanced scientific research in these and related fields

i). On the theory of unbounded operators:

In 1984, I defined and systematically studied a concept of Commutants for unbounded operators based on the theory of operators on a partial inner product space. I established a relationship between the bicommutant that I introduced (called the Shabani bicommutant by the Editor of the Journal of Mathematical Physics) and a bicommutant introduced by Araki and Jurzak for closed Op^* -algebras satisfying some countability conditions. This new concept of commutant has helped to advance research in the field of Op^* -algebras and their applications.

ii) Quantized fields

In 1988 I defined a new formulation of quantized fields from the theory of operators on a partial inner product space. This formulation has opened up new perspectives in research in this field.

iii). Delta potentials supported on spheres

In my doctoral thesis, I defined these singular potentials using the theory of self-adjoint extensions of symmetric closed operators in Hilbert spaces. The first results of this research work were published jointly with J.P Antoine and F. Gesztesy in 1987 in Journal of Physics A. Subsequently, I have produced several new results on these potentials both in relativistic and non-relativistic quantum mechanics. These results have contributed greatly to advancing theoretical research on these potentials. They were also used to develop mathematical models for some physical phenomena. This is for example the case for the work on «A mathematical model of heavy quarkonia mesonic decays» developed by Antoine, Exner, Seba, and Shabani and published in Annals of Physics,

The contributions presented above have led to the publication of 29 articles in major journals, including prestigious journals such as Annals of Physics, Journal of Mathematical Physics and Journal of Physics A.

A.2. CONTRIBUTION TO THE DEVELOPMENT OR REVISION OF NATIONAL/REGIONAL SCIENCE, TECHNOLOGY AND INNOVATION (STI) POLICIES.

i). General STI Policies

In 2010 when I was Director of the UNESCO Bamako Cluster Office, I collaborated with Dr Shamila Nair Bedouelle, Currently Assistant Director General of UNESCO for Science to organize training workshops on the design and development of national STI policies for ECOWAS countries with financial support from the Islamic Development Bank. As a follow up to these workshops, I coordinated the development of these policies in Mali, Burkina Faso and Guinea.

In 2018 I helped to finalize the East African Community policy document on STI

ii) National STI Policies responsive to Gender Issues

When I was a senior specialist in higher education at the UNESCO Nairobi Office, I organized in 1997:

A regional Conference on Girls and women in science and technology in Africa: challenges and opportunities for the 21st century
(<http://unesdoc.unesco.org/images/0011/001107/110789E.pdf>)

In 2012, when I was Director of the UNESCO Bamako Cluster Office, I organized an international conference on girls and women in science and technology in Africa

iii) Sensitization and Policy Awareness raising

I was twice Vice- President of the African Academy of Sciences and three times Vice-President of the African Mathematical Union. I have used these mandates whenever possible to raise awareness among the Policy makers in African countries about the need to promote science and technology in the various components of national development policy. It is thanks to this awareness that the Burundi Academy of Sciences receives strong support from the Government of Burundi

A.3. SUPPORT TO AFRICAN UNIVERSITIES

In late 1980s/early 1990s I served as External Examiner in Mathematics at Maseno University College in Kenya and at the Addis Ababa University in Ethiopia;

In 2009, when I was Director of the UNESCO Bamako Cluster Office, I established the University of Bamako Virtual Library with a technical support from the Nigerian National Universities Commission. This library has allowed the university community of Mali to have access to a thousand online documents in all fields of scholarship, including the scientific fields (<http://www.ernwaca.org/panaf/spip.php?article1158>)

A.4. STRENGTHENING THE CAPACITY OF AFRICAN UNIVERSITIES

Since the 1980s, I have organized several activities that have helped African universities build capacity in the fields of science, technology and innovation. These activities include:

i). Capacity Building Workshop

When I was a Staff member and then Vice-rector of the University of Burundi.

- October 1987: 1st Bujumbura International Conference in Mathematics on the theme: «*Mathematical Physics*»;

- October 1989: 2nd Bujumbura International Conference in Mathematics on the theme «*Mathematical analysis and its applications in Physics*»

When I was Deputy Secretary General of the Association of African Universities in Accra, Ghana

- July to August 1993, 1994,1995 in Accra, Ghana in collaboration with Professor F.Allotey: 1st, 2nd and 3rd Edward Bouchet Schools on differential equations and their applications. These schools brought together several students enrolled in Master's or Phd studies at universities in West African countries.

Currently while I am Director of the Doctoral School of the University of Burundi

- December 2019 in Bujumbura. 1st International Mathematics Conference of the Doctoral School of the University of Burundi and 17th Inter- Seminar of the African Group on Research in Analysis, Geometry and Applications. This activity was jointly organized by the Doctoral School of the University of Burundi, the University of Abomey Calavi of Benin and the University of Yaoundé 1 of Cameroon.

ii). Use of Online resources

In 2010 I organized in Bamako and Segou in Mali a week-long workshop for the Academic staff and researchers from African universities to teach them how to use some online resources, in particular: open educational resources, virtual libraries and virtual laboratories

iii). Teaching and Learning in Higher Education

When I was Senior Specialist at the UNESCO Regional Office for Education in Africa in Dakar, Senegal, I developed in 1998 in collaboration with Professor Obanya and Professor Okebukola

- A pedagogical guide on “*Teaching and Learning in Higher Education*” that was used to train several hundreds of Academic Staff in African Universities.

In 2004 when I was Director of the UNESCO Harare Cluster Office in Zimbabwe, I established (in collaboration with Professor Okebukola) a Virtual Institute which has enabled us to train more than 10,000 Academic staff in African universities on modern teaching and learning techniques in general and on teaching specific discipline clusters - including the humanities, sciences, engineering, technology, environmental science and the medical sciences. The Guide was revised in 2013
(<https://www.universityworldnews.com/post.php?story=20110918093241230>)

B. CONTRIBUTIONS TO EDUCATION

B.1. CONTRIBUTION TO EDUCATION POLICY DEVELOPMENT AND STRATEGIC PLANNING

i). Higher Education Policy Development in Burundi

From 1993 to 1995, I coordinated an academic and financial audit of the University of Burundi with a financial support from the World Bank. The audit resulted in the development of the Strategic plan for the university that helped to guide implementation of a major reform of higher education in Burundi. Subsequently, these documents were used for the development of a national higher education policy;

ii). Development of a Strategic Plan for Moi University in Kenya.

In 2001, I coordinated the development of a strategic plan for Moi University in Kenya as part of the implementation the “MHO” project funded by NUFFIC (The Netherlands). This plan was used as a major input to the development of the university wide policy that in turn contributed to the development of the Kenya higher education policy;

iii).Development of the World Bank Policy Paper for Higher Education in Sub-Saharan Africa

I was a Member of the International Panel of Experts that developed the new World Bank African Higher Education Policy. This policy was approved by the World Bank Board in 2008;

ii).National Teacher Education Policies in Mali, Guinea and Niger

During my tenure as Director of the UNESCO Bamako Cluster Office in 2007-2013, , I supervised the development of teacher education policies in Mali, Guinea and Niger as part of the implementation of the “Capacity Development for Education for All (CapEFA) Programme”, a UNESCO Extra budgetary Programme financed by the governments of Denmark, Sweden, Norway, Finland and Switzerland;

v). Technical and Vocational Education and Training Policy for Botswana.

I was recruited in September 2014 by the Government of Botswana to facilitate the development of this policy. The first draft of the policy document was submitted to the Ministry of Education on 17th December 2014. The final policy document was approved in March 2015.

vi). Development of the Rwanda Higher Education Sector Strategic Plan

I was member of the Experts' team which developed this plan that was approved by the Government of Rwanda in February 2018.

B.2. CONTRIBUTION TO QUALITY ASSURANCE AND IMPLEMENTATION OF THE "Licence-Master-Doctorate" (LMD) REFORM.

i). International Conferences on Quality Assurance in Higher Education in Africa (ICQAHEA) and Capacity Building Workshops.

Since 2006, I organize a series of international conferences on quality assurance in higher education in Africa and capacity-building workshops. Each conference / workshop brings together between 150 and 200 participants. Nine conferences have been organized: Nairobi, 2006; Dar es Salaam and Zanzibar, 2007; Dakar and Saint Louis, 2008; Bamako and Segou, 2010; Abidjan, 2012; Bujumbura, 2014; Abuja 2015; Windhoek 2016 and Accra 2017. The 10th ICQAHEA will take place in Yaoundé, Cameroon in September 2018. These conferences / workshops have helped to train more than 2500 experts on various issues of quality assurance. The 6th, 7th, 8th, and 9th conferences were followed by 6 capacity building workshops that covered the following areas: Statistical Models to Predict Quality in Higher Education Systems; Implementation of the revised Arusha Convention; Creation and effective operation of quality assurance agencies and units; Development of a credit transfer and accumulation system; Strengthening and accelerating the implementation of the LMD reform.

ii). Bachelor-Master-Doctorate (BMD reform in the West African Economic and Monetary Union (in its French acronym UEMOA)).

I designed and developed a project proposal on the theme: "*The Use of ICTs to Enhance the Capacity for Implementation of the BMD Reform in Higher Education Institutions in the UEMOA Member States.*" I mobilized an amount of USD12.7 million for the implementation of this project. I coordinated the implementation of this project during the period from February 2011 to December 2012 when I was Director of the UNESCO Bamako Cluster Office.

iii). Evaluation of the Bachelor- Master-Doctorate (BMD) reform in Burundi.

I was recruited as a Consultant by the University of Burundi to evaluate the implementation of the BMD reform in this University. The assignment started in October 2016 and was completed in April 2017. The Government of Burundi and Higher Education institutions are currently implementing the recommendations of the evaluation report.

iv). Publications

As indicated in the List of publications, I have produced a Guide and several research papers in the area of Quality Assurance in higher Education in Africa.

B.3. CONTRIBUTION TO TEACHING AND LEARNING IN HIGHER EDUCATION.

In 1998, I published in collaboration with Professor Pai Obanya and Professor Peter Okebukola, a Guide on Teaching and Learning in Higher Education. Subsequently, I mobilized an amount of USD 400,000 from the Episcopal Conference of Italy to organize 15 national and sub-regional capacity building workshops on the content of the Guide. The feedbacks received from the workshops helped to finalize the Guide and to establish, in collaboration with the National Universities Commission (NUC) of Nigeria, the "*Virtual*

Institute for Higher Education in Africa” (VIHEAF) which was used to provide online training on teaching and learning in higher education. During the period from 2004 to 2010, the VIHEAF helped to train more than 10,000 higher education teachers in Africa. The feedback received from participants in these trainings and new/emerging developments in higher education at the global level were used to develop and publish a new Guide in 2013 in collaboration with Professor Peter Okebukola : "*Guide to Effective Teaching and Learning in Higher Education in Africa*". At the global level, this Guide is considered as one of the best references on Teaching and Learning in Higher Education.

B.4. CONTRIBUTION TO ACHIEVEMENT OF THE EDUCATION FOR ALL (EFA) GOALS.

During my tenure as Director of the UNESCO Bamako cluster office, I carried out several activities related to the implementation of the six EFA goals. These include the following:

i). the African Regional Conference in Support of Global Literacy, Bamako, Mali, 10 to 12 September 2007.

I organized this high-level advocacy conference in collaboration with the UNESCO Institute for Lifelong Learning, the Government of Mali and other partners in order to contribute to the achievement of the EFA goal n° 4 of "*Achieving a 50 per cent improvement in levels of adult literacy by 2015*". The conference was attended by more than 400 participants including UNESCO Director General, Ministers and Directors in charge of literacy, Ministers of Finance from the countries with the highest literacy needs, First Ladies, Representatives from governments, civil society, research institutes and bi- and multilateral organizations. The Conference was opened by the President of Mali

ii). Donor' Roundtable on the Development of Youth's Technical, Vocational and Entrepreneurial Skills to promote youth's self-employment in Niger in the informal sector in 2008.

I organized this roundtable in 2008 in Niger in collaboration with the Government of Niger, UNDP and the World Bank as part of the contribution to the achievement of EFA Goal n° 3 of "*Ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life-skills programs*". This roundtable helped to raise pledges amounting to US\$100 million. Several donors have since paid their contributions.

iii). Capacity Development for Education for All (CapEFA) Program.

As part of implementation of the CapEFA program, I designed and coordinated implementation of CapEFA programs in Burkina Faso, Guinea, Mali and Niger for an amount of more than USD 6million. These programs focused on strengthening policies and developing capacities of teacher training institutions for both formal and non-formal education and promoting literacy programs. These programs are related to EFA n° 2 to 6. External evaluation of these programs showed that they have fully achieved the expected results.

iv). Capacity Building of Teacher Training Institutions in Burkina Faso.

I mobilized financial resources from Monaco and the Sultanate of Oman to strengthen the capacity of Teacher Training Institutions in Burkina Faso in teaching and learning techniques in order to improve the pedagogic skills of basic education teachers. This activity is related to the EFA Goals n° 2, 5, and 6.

v). Literacy and Girls' and Women's Empowerment in Niger

I mobilized financial resources from governments of Andorra, Cyprus, Luxembourg, Monaco and San Marino to design and implement a pilot project on literacy and girls' and women's empowerment in two municipalities in the Niamey region, the capital of the Republic of Niger. The project has been implemented so successfully that the Government decided to extend it to the whole country. This project is related to the EFA Goal n° 5.

B.5.CONTRIBUTION TO HIGHER EDUCATION REFORMS.

Between 1997 and 2001, I was part of Experts Teams that conducted feasibility studies for the establishment the University of The Gambia, the State University of Zanzibar and the University of Kara in Togo;

From 1999 to 2001, I led a series of consultations on revitalization of higher education in the West African Economic and Monetary Union (WAEMU). I mobilized resources from the African Development Bank (AfDB) to conduct feasibility studies and make recommendations on improving infrastructure and quality of higher education in UEMOA Member States. The implementation of these recommendations was funded by the AfDB through the "programme d'appui à l'enseignement supérieur (PAES).

In 2008, I made a substantial intellectual contribution to the preparation of the national education fora in Mali and Guinea. The recommendations that I proposed in a series of concept notes have been incorporated into the final documents of these fora.

B.6. MOBILIZATION OF FINANCIAL RESOURCES FOR EDUCATION AND RESEARCH.

At the Association of African Universities, I developed project proposals that have helped to mobilize financial resources from several Donors including : the Ford and Carnegie Foundations, the International Development Research Centre (IDRC), the Canadian International Development Agency (CIDA), the Swedish International Development Agency and Norwegian Agency for Development Cooperation. These funds are in addition to those I have mobilized from the Episcopal Conference of Italy, the African Development Bank and UEMOA for capacity building in teaching and learning and implementation of higher education reforms in the UEMOA Member States. In 2008, I organized a Donor's roundtable on vocational education and training in Niger. This roundtable has helped to raise pledges amounting to over USD100 million and several pledges were paid. From 2014 I have mobilized funds from the European Union for the organization of the International Conferences on Quality Assurance in Higher Education in Africa.

B.7. CONTRIBUTION TO THE DECADES OF EDUCATION FOR AFRICA.

While at the UNESCO Regional Bureau for Education in Africa, I coordinated the development of the action plan of the 1st Decade of Education in Africa and organized in 1998 in Ouagadougou, Burkina Faso, an Experts workshop to finalize the plan. In 2003, I was part of the Experts team that developed the NEPAD Education Strategy in Johannesburg. I also participated in 2005 in Algiers and Addis Ababa in the preparation of the 2nd Conference of African Ministers of Education (COMEDAF II) held in Algiers and I was part of the team that developed the Document and the draft Plan of Action of the 2nd Decade of Education in Africa (2006-2015).

B.8. CONTRIBUTION TO THE DEVELOPMENT AND USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN TEACHING, LEARNING AND RESEARCH.

In 2004 when I was Director of the UNESCO Harare Cluster Office, I established in collaboration with the National Universities Commission (NUC) of Nigeria a Virtual Institute for Higher Education in Africa that provided several online courses for teachers capacity building in various fields such as HIV and AIDS prevention and treatment education; teaching and learning in higher education, and development of learning materials for distance education. The institute has helped to train over 20,000 learners worldwide. From November 2009 to September 2013 when I was transferred from Bamako to Paris, I organized several capacity building workshops on the development and use of virtual technologies in teaching, learning and research, including virtual libraries, virtual institutes, open educational resources and virtual laboratories.

C. KNOWLEDGE OF LANGUAGES.

I speak and write fluently the following languages: French, English, Swahili and Kirundi. I also have a good knowledge of the Russian language that I used during my studies in Ukraine from 1972 to 1978

D. MEMBERSHIP TO SCIENTIFIC SOCIETIES AND INTERNATIONAL COMMITTEES

- President of the Burundi National Commission for Higher Education
- Member of the National Commission for Science, Technology and Innovation ^
- President of the Burundi Academy of Science en Technology
- President of the International Conferences on Quality Assurance in Higher Education in Africa ;
- Fellow of the World Academy of Sciences (TWAS), Trieste, Italy
- President of the International Advisory Board of the Africa Centre of Excellence on Innovative and Transformative STEM Education at Lagos State University in Nigeria
- President of the International Conferences on Quality Assurance in Higher Education in Africa ;
- Member of the Executive Committee of the Global University Network for Innovation, Barcelona, Spain; ;
- Member of the Board of the Centre for Higher Education Trust Cape Town, South Africa ;
- Member of the African Academy of Sciences; Nairobi, Kenya

- Member of the Institute for African Culture and International Understanding, Olusegun Obasanjo Presidential Library, Abeokuta, Nigeria
- Member of the Scientific Committee of the World Bank funded Centre of Excellence on STEM at Lagos State University, Nigeria;
- Member of the High Level Panel of the Pan African University;
- Coordinator of the African Union quality assurance cluster;
- Member of the Coordination Committee on the Implementation of the East African Community Higher Education Leadership Programme (EAC-HELP)
- Former Member of the Board of Trustees of the UbuntuNet Alliance for research and education networking;
- Former Vice President of the African Academy of Science for Central Africa;
- Former Vice President of the African Mathematical Union for Central Africa;
- Former Co-Director of the Virtual Institute for Higher Education in Africa;
- Former Member of the International Board of Suffolk University, Boston, USA;

E.MAJOR PUBLICATIONS

<https://scholar.google.com/citations?user=IISQWgIAAAAJ&hl=fr>

I. MATHEMATICAL PHYSICS

1. Mathot, Françoise; **Shabani, Juma** Generalized unbounded commutants. *Proceedings of the second international conference on operator algebras, ideals, and their applications in theoretical physics (Leipzig, 1983)*, 108--111, Teubner-Texte Math., 67, Teubner, Leipzig, 1984:
2. **Shabani, J.** Commutants of a family of operators on a partial inner product space. *J. Math. Phys.* **25** (1984), no. 11, 3204--3208.
3. **J Shabani**; L.K Shayo. On some solvable models in non-relativistic quantum mechanics. International centre for Theoretical Physics, Trieste, Italy 1985.
http://www.iaea.org/inis/collection/NCLCollectionStore/_Public/17/063/17063256.pdf
4. **Shabani, J.** On some classes of unbounded commutants of unbounded operator families. *J. Math. Phys.* **28** (1987), no. 9, 2046--2050.
5. Antoine, J.-P.; Gesztesy, F.; **Shabani, J.** Exactly solvable models of sphere interactions in quantum mechanics. *J. Phys. A* **20** (1987), no. 12, 3687--3712.
6. **Shabani, J.** Sur la formulation géométrique des théories de jauge. Ezin, J.P.; Verjovsky, A. (eds.); International Centre for Theoretical Physics, Trieste (Italy); 185 p; ISBN 9971-50-644-0; 1988; p. 66-77; World Scientific; Singapore (Singapore); Seminar on fibre bundles: Their use in physics; Trieste (Italy); 27 Apr - 1 May 1987.
7. **Shabani, J.** Some properties of the Hamiltonian describing a finite number of δ' -interactions with support on concentric spheres. *Nuovo Cimento B (11)* **101** (1988), no. 4, 429--437.
8. **Shabani, J.** Finitely many δ - interactions with supports on concentric spheres. *J. Math. Phys.* **29** (1988), no. 3, 660--664.
9. **Shabani, J.** Quantized fields and operators on a partial inner product space. *Ann. Inst. H. Poincaré Phys. Théor.* **48** (1988), no. 2, 97--104.
10. Dabrowski, L.; **Shabani, J.** Finitely many sphere interactions in quantum mechanics: nonseparated boundary conditions. *J. Math. Phys.* **29** (1988), no. 10, 2241--2244.

11. J.Shabani. Sphere Interactions in Quantum Mechanics : Approximation by scaled short range potentials and convergence of bound states and resonances. 1988. <http://www.ub.edu.bi/wp-content/uploads/2015/12/Art1.pdf>
12. **Shabani, J.** Some unbounded commutants of a set of operators on a partial inner product space. *J. Math. Phys.* **29** (1988), no. 11, 2405--2410.
13. Ohanjanian,V; **Shabani, J.** Application du principe topologique du point fixe de Schauder à certaines classes d'équations intégrales régulières et singulières. Revue de l'Université du Burundi. Série Sciences exactes N°9 (1989) pages 89-108.
14. **Shabani, J.** On some class of topological quasi *-algebra. *Bull. Soc. Roy. Sci. Liège* **60** (1991), no. 2-3, 83--90.
15. **Shabani, J.** Finitely many sphere interactions in quantum mechanics: approximation by momentum cut-off Hamiltonians. *Ann. Soc. Sci. Bruxelles Sér. I* **105** (1991), no. 3, 105--111 (1992).
16. **Shabani, J.** On the weak completion of the space of operators on a partial inner product space. *Bull. Soc. Roy. Sci. Liège* **61** (1992), no. 6, 457--463.
17. **Shabani, Juma** Hamiltoniens quantiques perturbés par des potentiels de surface. *Afrika Mat.* (3) 2 (1993), 111--117.
18. Antoine, J-P ; Exner, P ; Seba, P ; **Shabani, J.** A mathematical model of heavy quarkonia mesonic decays. *Annals of Physics*, vol 233, Issue 1, July 1994, pages 1-16.
19. Antoine, J.-P.; Exner, P.; Seba, P.; **Shabani, J.** A Fermi-type rule for contact embedded-eigenvalue perturbations. *Mathematical results in quantum mechanics (Blossin, 1993)*, 79--87, *Oper. Theory Adv. Appl.*, 70, *Birkhäuser, Basel*, 1994.
20. Hounkonnou, M. N.; Hounkpe, M.; **Shabani, J.** Scattering theory for finitely many sphere interactions supported by concentric spheres. *J. Math. Phys.* **38** (1997), no. 6, 2832--2850.
21. Hounkonnou, M. N.; Hounkpe, M.; **Shabani, J.** Exactly solvable models of δ' - sphere interactions in nonrelativistic quantum mechanics. *J. Math. Phys.* **40** (1999), no. 9, 4255--4273.
22. Ben Amor, A, Blanchard, Ph and **Shabani, J.** Asymptotic behavior of kernels associated to singular perturbations in two dimensions. July 2000, University of Bielefeld, Germany. <http://www.physik.uni-bielefeld.de/bibos/old-bibos-site/00-06-16.ps>
23. **A Shabani, J.;** Vyabandi, A. A note on a series of papers on relativistic δ -sphere interactions in quantum mechanics published by M. N. Hounkonnou and G. Y. H. Avossevou in the Journal of Mathematical Physics. *J. Math. Phys.* **43** (2002), no. 12, 6380--6384.
24. **Shabani, J.;** Vyabandi, A. Exactly solvable models of relativistic δ -sphere interactions in quantum mechanics. *J. Math. Phys.* **43** (2002), no. 12, 6064--6084.
25. Ndirahisha, J ; **Shabani, J.** Spheroidal interactions in non-relativistic quantum mechanics. *Il Nuovo Cimento B*, vol 119, Issue 4, p331, 2004.
26. **Shabani, J ;** Vyabandi, A two parameters model of relativistic point interactions in one dimension. *Memoirs on Differential Equations and Mathematical Physics*, vol 35, 2005, 129-146.
27. A.Vyabandi; J. Shabani. Two parameters nonrelativistic δ -sphere interaction in quantum Mechanics. *Fundamental J. Mathematical Physics* vol2. Issue2, 2012, 27-48.
28. A.Vyabandi ; **J.Shabani.** Exactly solvable model of 2N parameters relativistic points interactions in quantum mechanics. *Revue de l'université du Burundi, Série Sciences Exactes* vol. 27 (2013).

29. A. Vyabandi and J. Shabani. Scattering Theory for 2N Parameters Models of Finitely Many Relativistic δ - Sphere and δ - Sphere Plus Coulomb Interactions Supported by Concentric Spheres in Quantum Mechanics. 2020 Advances in Mathematical Physics (in press)

II. HIGHER EDUCATION

30. **Juma Shabani** : A case study on Africa. In Alma Craft (Ed). International Developments in Assuring Quality in Higher Education: Selected Papers from an International Conference, Montreal, 1993. Falmer Press, 1994.
<http://trove.nla.gov.au/work/29967639?selectedversion=NBD10901855>
31. **Shabani, J**, 1995. "Higher Education in Sub-Saharan Africa: Strategies for the Improvement of the Quality of Training." Quality in Higher Education, 1 (2), pp. 173-178. http://www.aau.org/sites/default/files/urg/docs/bibliography-higher_educ_africa.pdf
32. **Shabani, J**, 1996. Research Management in African Universities. Association of African Universities, Accra, Ghana, 49pp.
33. **Juma Shabani (Ed)**. Higher Education in the Twenty First Century : Achievements and Challenges in the Eastern and Southern African Region. Proceedings of a Consultative Meeting. Nairobi, Kenya 12-14 february 1997.
<http://unesdoc.unesco.org/images/0011/001107/110791Eo.pdf>
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35. **Shabani, J**. 1998. "Lifelong Higher Education for All in Sub-Saharan Africa." In Juma Shabani (ed.), Higher Education in Africa: Achievements, Challenges and Prospects. Dakar: UNESCO Regional Office for Africa (BREDA).
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