0. MOTTO:"It Always Seems Impossible Until It's Done" Late Hon. Nelson ROLIHLAHLA MANDELA.

1. CONTACT DETAILS

- Staff@UNISA:1 Preller street, Muckleuneuck, Pretoria 0001, Gauteng province, South Africa.
- Staff @IThemba LABS : iThemba LABS-National Research Foundation,1old Faure road,POBox722, Somerset 7129, South Africa.
- Email | Maazam@unisa.ac.za/Maaza@tlabs.ac.za | Tel | +27(0)218431149/45/46 | +27(0)782748584

2. FAMILY STATUS

—●Permanent Residence since 1996 —●Married to Mrs. Veronique Grange with 3 children (Kaci-Alexander, Massinissa- Thomas, Akli-Luc),
—●South African citizenship(By Residence),—● French citizenship(By Marriage),—● Algerian citizenship(By Birth),

3. ACADEMIC QUALIFICATIONS

- 1991 —● Ph.D in neutron wave-matter optics | Paris VI & Commissariat a l'Energie Atomique | France.
- 1988 —● MSc | Paris VI | Lasers & photonics | Paris-France.
- 1987 —● Diplome d'Etudes Superieure | Solid state Physics | Oran University | Oran-Algeria.
- 1986 —● Honours | Solid state Physics | Oran University | Oran-Algeria.
- 1982 —● Matric diploma in Mathematics | Oran Les Palmiers College | Oran-Algeria.

4. LANGUAGES & COMMUNICATION SKILLS

- Arabic: ● Speaking – writing.
- French: ● Speaking – writing.
- English: ● Speaking – writing.
- Amazigh: ● Speaking

5. RESEARCH OUTPUTS SUMMARY

—● Stanford Univ.Classification Metric/Most influential worldwide scientists: Top~ 2% since 2019
—● Hirsh Index Hindex : ~114
—● I-10 Index i10-index: ~ 617
—● Total citations: ~42 377
—● RG: ~49.01
—● Granted IP: ~05
—●International invited talks: ~ 225 —● International plenary talks ~117
—● https://scholar.google.com/citations?user=e6kaeYMAAAAJ&hl=zh-CN
—● ORCID: https://orcid.org/0000-0002-3820-7838
—● Research Gate: https://www.researchgate.net/profile/Malik_Maaza
—● Scopus ISI/Peer reviewed publications: ~ 693
—● Conferences Proceeding peer reviewed publications: ~109
—●Book chapters:~04 —●International Editorial Membership:~11
—● HCD (postgrads/MSCs+PhDs) :~ 137 —● HCD (postdocs):~35 —● HCD (Junior staff:~26
—●Bi-Multilateral/continental cooperation projects +completed: 47 (since 1997) —●Fundraising: MR296.7 (since 2005) —● Awards/International Recognitions: ~ 32

6. ACADEMIES MEMBERSHIP

- 2019 —● Fellow of the National Academy of Sciences of India, NewDelhi-India,
- 2018 —● Fellow of the European Academy of Sciences & Arts, Wien-Austria,
- 2015 —● Fellow of the American Association for Advancement of Science(AAAS),Washington-USA,
- 2015 —● Fellow of the Royal Society of Chemistry, London-UK,
- 2014 —● Fellow of Islamic Academy of Sciences, Amman-Jordan,
- 2014 —● Fellow of the African Academy of Sciences, Nairobi-Kenya
- 2013 —● Fellow of the New York Academy of Sciences, Washington-USA
- 2012 —● Ambassador, the International Foundation of Sciences(IFS), Uppsala-Sweden,
- 2011 —● Member of the USA-Africa EBASI Society, Atlanta-USA,
- 2018 —● Member of the Athens Institute for Education & Research (ATINER), AThens-Greece,

7. FIELDS OF EDUCATION, STI/R&D EXPERTISE

—● Science for Society & Societal benefits,
—● Photonics & wave–matter optics,
—● Nanosciences, nanotechnologies,
—● Biogenic based advanced materials
—● Nanophotonics, photo-active nanomaterials,
—● Smart coatings for IR optical modulation & nanoplasmonics
—● Biogenic nanoparticles & Green nanochemistry,
—● Biophysics, biomimics, chromogenic devices &applications,
—●Neutron, X-rays scattering and nuclear based techniques

8. INNOVATION, R&D TRANSLATIONS, PATENTS & PROOFS OF CONCEPTS

From the innovation perspective and R&D translations, one should point out 4 patents & PCTs applications as well as 11 proofs of concepts:

1-IP-1: —● US202/01056A1),
2-IP-2: —● W O 2022/073044 A1,
3-IP-3: —● PCT-2023/01095, and
4-IP-4: —● PCT-P00249WO-PCT

In addition to the above patents, 11validated proofs of concept have been realized & shared in an open access to ensure that the whole scientific community duplicates such a processes in view of altogether contributing for Climate change action:

1- Proof of concept of "CO2 foot print minimization: CO2 removal & its conversion to multi-functional carbonates"/ https://www.nature.com/articles/s41598-023-42905-5/

2- Proof of concept of "Energy consumption minimization & green airconditioning via thermochromic coated smart windows"/ https://www.nature.com/articles/s41598-024-52021-7/

3- Proof of concept of Heat waste recovery through advanced novel generation of coolants family; nanofluids"/ https://www.nature.com/articles/s41598-020-67418-3/
/ https://www.nature.com/articles/s41598-020-71740-1/
/ https://www.nature.com/articles/s41598-022-14540-z/

4- Proof of concept of "Cost effective electroluminescent materials for OLED applications"
/ https://www.nature.com/articles/s41598-023-50867-x/

5- Proof of concept of " Cost effective Hg storage for Hg hazardous waste storage"
/ https://www.nature.com/articles/s41598-022-06857-6/

6- Proof of concept of " Indigenous knowledge based Nano-formulations as cost effective antibacterials"
/ https://www.nature.com/articles/s41598-021-04663-0/

7- Proof of concept of " Indigenous knowledge based Nano-formulations as cost effective UV skin protection"
/ https://http://www.nature.com/articles/s41598-022-06828-x/

8- Proof of concept of " nano-composite for Breast cancer treatment"
/https://http://www.nature.com/articles/s41598-020-78720-5/

9- Proof of concept of " Effective photocatalyst for water decontamination & waste water treatment"
/https://www.nature.com/articles/srep38064/
/ https://www.nature.com/articles/s41598-022-25723-z/

10- Proof of concept of " Cost effective detection technologies of Viral (SARS-COV) & toxic compounds"
/ https://www.nature.com/articles/s41598-021-81617-6 /
/https://www.nature.com/articles/s41598-024-56456-w/

11- Proof of concept of "Waste valorizationtowards biomedical applications"
/ https://www.nature.com/articles/s41598-021-81880-7/

9. EDITORIAL FUNCTION

- 2024 —● Associate editor, | Frontiers in Bioengineering and Biotechnology – Nanobiotech, Switzerland
- 2022 —● Associate editor, | Nature Scientific Reports | Nature-Spinger Publishing
- 2021 —● Editor-In-Chief | Nano-Horizons, | Open Access J. | UNISA Publishing
- 2018-2019 —● Editorial member | Scientific African, | Physical sciences Editor | Elsevier-North Holland
- 2014-2019 —● Editorial member | Journal of Nanomaterials | Hindawi Publishing
- 2012-2017 —● Editorial member | Advanced Nano Research (ANR) | InterTech Pub, Seoul-South Korea
- 2015 —● Editorial member | Annals of Nanoscience and Nanotechnology
- 2014-2016 —● Editorial member | Science Technology & Development Pakistan Council for Sci. Tech.
- 2014-2016 —● Associate editor | Science of Advanced Materials (SAM) | American Scientific Publishers,
- 2007-2012 —● Associate editor | Journal of Nanoelectronics and Optoelect. | American Scie. Publis,
- 2007-2012 —● Editorial Board Member | General Chemistry | American Scientific Publishers,
- 2007-2012 —● Editorial member | International Journal of Synthesis & Applications of Nanomaterials |
- 2007-2012 —● Editorial member | Journal of Nanotechnology& Advanced Material | Natural Scie. Publ
- 2007-2012 —● Advisory Board member | Royal Society J. Materials Chemistry | London-United Kingdom
- 2007 —● Editorial member | Int. J. of Nanotechnology (IJNT) | Indersciences publishing, Berkeley-USA
- 2007-2012 —● Editorial member | African Physical Review (APR) | Trieste-Italy,

10. ACADEMIC POSITIONS

- 2013-2028 —● UNESCO-UNISA Africa Chair in Nanosciences & Nanotechnology | UNESCO | Paris-France
- 2013-2028 —● Extraordinarius Professor | University of South Africa (UNISA) | Pretoria-South Africa
- 2007-8 —● Invited professor | Nelson Mandela African University for S&T | Abuja-Nigeria.
- 2012 —● Invited Scientist | National institute for materials science (NIMS) | Tsukuba-Japan
- 2005-2013 —● Senior scientist | iThemba LABS-Western | National Research Foundation | Pretoria- South Africa
- 1997-2004 —● Senior lecturer | Faculty of sciences-Univ. of the Witwatersrand | Johannesburg-South Africa
- 1995 —● Postodoctoral-France | Lab. Surface& interfaces/University of Le Maine, Le Mans-France
- 1994 —● Postodoctoral-France | Lab. de Couches Minces & Multicouches/Optique X, Orsay-France
- 1993 —● Postodoctoral-Austria | QuantumNeutron Interferometry, Atominstitut Osterreichishen Univ., Vienna
- 1992 —● Postodoctoral-Russia | Neutron Optics Division, Frank Laboratory, Dubna
- 1991 —● Postodoctoral Germany | Neutron Optics Group, Hahn-Meitner Institute, Berlin
- 1989-91 — ● PhD, Quantum Neutron Optics, Commissariat a l'Energie Atomique, Saclay-France

11. AWARDS & MAJOR HONORS

- 2026 —● Feynmann Foresight award, Washington-USA (nominated) .
- 2025 —● Oppenheimer Memorial Trust award, Cape Town-South Africa(nominated) .
- 2024 —● Presidential Algeria Wissam,Algiers-Algeria .
- 2024 —● International Union for Pure & Applied Physics award, Haikou-China.
- 2024 —● Khawarizmi international award | Tehran-Iran.
- 2022 —● Abdus Salam Spirit award | Trieste-Italy.
- 2021 —● Association of the Commonwealth Universities award | London-UK.
- 2019 —● Galileo Galilei International Commission for Optics award | Dresden-Germany.
- 2019 —● Presidential Mapungubwe Silver National Order | Pretoria-South Africa.
- 2018 —● World Cultural Council Jose Vasconcelos World Award of Education | Hong-Kong.
- 2018 —● National Science &Technology Forum Green Innovation Award | Pretoria-South Africa.
- 2017 —● African Union Continental Nkwame Nkrumah Excellence award in Scie-Tech | Ethiopia
- 2015 —● Chancellor Research Excellence award | South Africa
- 2013 —● UNESCO-UNISA Africa chair in Nanosciences & Nanotech., France
- 2015 —● Swiss Government Excellence bilateral award, Bern-Switzerland
- 2014 —● National Research Foundation 10 years achievement award | South Africa
- 2013 —● National Research Foundation-iThemba LABS excellence award, South Africa
- 2005 —● Cambridge award, UK
- 2000 —● Mellon Foundation Award, South Africa
- 1999 —● Khambule Award, Johannesburg-South Africa
- 1997 —● Friedel Sellschop Award | Johannesburg-South Africa
- 1998 —● Honeywell Int. Prize, USA
- 1992 —● Austrian Forschungsförderungsfonds der gewerblichen Wirtschaft award, Wien-Austria
- 1990 —● Young Talent in Neutron Scattering, Fermi School Series CXIV, Ancona-Italy
- 1989 —● Compagnie Industrielle des Lasers award, Marcoussis-France
- 2007 —● Global Nanotechnology Network Award | Taipei-Taiwan
- 2012 —● African Union accolade for the creation of the NANOAFNET, Ethiopia
- 2007 —● National Research Foundation-iThemba LABS excellence award | South Africa
- 2016 —● Extraordinary Professor at University of the Western Cape, Belleville-South Africa
- 2007 —● Extraordinary Professor at University of Pretoria Tshwane university of Tech, Pretoria-South Africa

12. MAJOR STRATEGIC MISSIONS/ RESEARCH & TECHNOLOGY MANAGEMENT IN AFRICA :

—Board Missions in Africa

- 2013●Board Member of the United Nations Association of South Africa/Cape Town-South Africa

—● 2010-—● Board Member | African Materials Research Society | Rutgers (USA)/Victoria Falls-Zimbabwe. —●Board Member | Advisory) | African network for solar energy-ICTP/UNESCO-AIEA | Linz-Austria.

—● 2005-●Board Member | African laser centre (ALC) | Pretoria-South Africa.

- 2016-●Board Member | Advisory) | UNECA United Nations Economic Commission for Africa | Network of African centres for technology development & transfer | Addis Ababa-Ethiopia.
- 2012-●In charge of the Africa UNESCO-UNISA Africa NanoChair | iThemba LABS-NRF, SA.
- 2011- ●In charge of the Africa & international relations Office | iThemba LABS-National Research Foundation,

- 2005-23●Manager & Chairman of the Nanosciences African Network (NANOAFNET), Trieste-Italy

—National& Africa representativity

- National contact point: Nanosciences, South Africa-Switzerland bilateral cooperation | Bern-Switzerland
- Regional Coordinator | African physical society (AfPS) | a NEPAD-AU observers | Accra-Ghana.
- Africa coordinator | Member of the EU-FP7 COST action 702 | Brussels-Belgium.
- National contact point of the Lasers, Atoms & Molecules Network(LAMNETWORK) | Dakar-Senegal ● National contact point Nanosciences/Nanomaterials | South Africa-Japan bilateral
- Africa representative | Global nanotechnology network (GNN) | Illinois-USA
- Co-director of the Abdus Salam ICTP nanocollege | Trieste-Italy
- Africa Council member | Africa Edward Bouchet Abdus Salam Institute (EBASI) | Accra-Ghana
- Africa representative of IUPAP nanosciences working group «IUPAP-C13» | Budapest-Hungary ●Founder & Chairman of the NanosciencesAfrican Network(NANOAFNET) | Trieste-Italy
- Associate fellow of the Abdus Salam ICTP | Trieste-Italy
- Co-Founding member with DST-DG of the African Laser Centre (ALC) | Pretoria-South Africa ●Co-Founding member with DST-DG of the South African Nanotechnology initiative (SANi) | Pretoria-SA. ●Co-Founding member with DST-DG of the National Laser Centre of South Africa | Pretoria-SA.
- Special senior advisor to the chief executive officer of the ALC | Pretoria-South Africa

13. ASSOCIATESHIP WITH UN-AGENCIES & PARTNERS

- 2014-16-●Africa nodal point of the ICS-UNIDO in nanosciences/nanotechnology | Trieste-Italy.
- 2016-18 ●Board Member | Advisory) | UNECA United Nations Economic Commission for Africa | Network of African centres for technology development & transfer | Addis Ababa-Ethiopia.
- 2005- ●Africa nodal point of the IAEA-UNESCO Abdus Salam ICTP (Trieste-Italy)
- 2013-16-●Jury member of the UNESCO-L'Oreal Award for Womenin Science (International)
- 2014-16-●Jury member of the UNESCO-L'Oreal Award for Women in Science (Africa)
- 2014-●Jury member of the UNESCO-L'Oreal Award for Women in Science (South Africa)

14- INITIATED & SUCCESSFULLY IMPLEMENTED STEM & EDUCATION PLATFORMS

—The NANOsciences African Network(NANOAFNET)/ (http://www.nanoafnet.tlabs.ac.za/)

- NANOAFNET: the NANOsciences AFrican NETwork for which I am the founding chairman, is an initiative created in 2005 in Trieste-Italy under the patronage of the Abdus Salam ICTP, UNESCO, IAEA, TWAS and the ICS-UNIDO, and supported by several international agencies, is theAfrican continent voice in the emerging field of nanosciences and nanotechnology.

—The African Laser Centre (ALC):

- As an AMCOST (African Ministerial Council on Science and Technology). flagship project, the ALC for which I was the co-initiator and founding member, was initiated in 1999 in Johannesburg and established in November 2003 by a group of African countries with an interest in laser applications, the African Laser Centre is destined to be a virtual centre that will serve as a central point for coordinating a network of excellence in laser research across the continent.

—The UNESCO UNISA Africa Chair in Nanosciences & Nanotechnology (U2ACN2)

- U2ACN2 i.e. the UNESCO UNISA Africa Chair in Nanosciences & Nanotechnology: for which I am the holder, is an initiative created and launched in 2012 by the UNESCO and the South African Commission, the University of South Africa "UNISA" and the National Research Foundation of South Africa via one of its national facilities: iThemba LABS.

15. SELECTED PUBLICATIONS

0• the trapping of neutrons in Fabry–Pérot nano-structures and potential applications for cold neutron lifetime Investigations, M. Maaza, B. Pardo, D. Hamidi, M. Akbari, R. Morad, M. Henini and A. Gibaud, Journal of Neutron Research, -1 (2023) 1–16.

1• Nano-structured Fabry-Pérot resonators in neutron optics & tunneling of neutron wave-particles Maaza, M., Hamidi, D.
Physics Reports 2012, 514(5), pp. 177–198/ 10.1016/j.physrep.2012.01.005

2•Thermal conductivity enhancement in gold decorated graphene nanosheets in Ethylene Glycol based nanofluid Mbambo, M.C., Madito, M.J., Khamliche, T., ...Mothudi, B.M., Maaza, M.
Nature Scientific Reports, 2020, 10(1), 14730/ 10.1038/s41598-020-71740-1

3• Photodegradation of organic pollutants RhB dye using UV simulated sunlight on CeO2 based TiO2 nanomaterials forantibacterial applications/

MM K Kasinathan, J Kennedy, M Elayaperumal, M Henini, M. Maaza
Nature Scientific reports 6, 38064 (2016)/ https://www.nature.com/articles/srep38064
4•First principle simulation of coated hydroxychloroquine on Ag, Au and Pt nanoparticles Morad, R., Akbari, M., Rezaee, P., ...Maaza, M., Jamshidi, Z./ https://www.nature.com/articles/s41598-021-81617-6
Nature Scientific Reports, 2021, 11(1), 2131/10.1038/s41598-021-81617-6
5•Title: CdO/CdCO3 nanocomposite physical properties & cytotoxicity against selected breast cancer cell lines Lefojane, R.P., Sone, B.T., Matinise, N., ...Maaza, M./ https://www.nature.com/articles/s41598-020-78720-5
Nature Scientific Reports, 2021, 11(1),
6•Isolation and characterization of chitosan from Ugandan edible mushrooms, Nile perch scales and banana weevils for biomedical applications/ https://www.nature.com/articles/s41598-021-81880-7
Ssekatawa, K., Byarugaba, D.K., Wampande, E.M., ...Ejobi, F., Kirabira, J.B.
Nature Scientific Reports, 2021, 11(1), 411610.1038/s41598-021-81880-7
7•Thermal conductivity enhancement in gold decorated graphene nanosheets in ethylene glycol based nanofluid M. C . Mbambo, M. J. Madito, T. Khamliche, C. B. Mtshali, Z. M. Khumalo,I. B. M. Mothudi & M. Maaza,
Nature scientific Reports, (2020) https://www.nature.com/articles/s41598-020-71740-1
8• DFT study on CO2 capture using boron, nitrogen, and phosphorus-doped C20 in the presence of an electric field, Rezaee, P., Asl, S.A., Javadi, M.H. et al.
Nature scientific Reports, 14, 12388 (2024)/ https://www.nature.com/articles/s41598-024-62301-x
9•From Himba indigenous knowledge to engineered Fe2O3 UV-blocking green nanocosmetics. Havenga, D., Akoba, R., Menzi, L. et al.
Nature scientific Reports, (2022) https://www.nature.com/articles/s41598-021-04663-0
10•From Khoi-San Indigenous Knowledge to Bioengineered CeO2 Nanocrystals to exceptional UV- Blocking Green Nanocosmetics,
N. Ditlopo, M. Maaza et al, (2022) 12:3468
Nature scientific Reports, (2022) https://www.nature.com/articles/s41598-022-06828-x
11•Mercury goes Solid at room temperature at nanoscale & a potential Hg waste storage,
N. Kana, M. Maaza et al,
Nature scientific Reports, (2022) https://www.nature.com/articles/s41598-022-06857-6
12• On the remarkable nonlinear optical properties of natural tomato
N. Numan, M. Maaza et al,
Nature scientific Reports, (2022) https://www.nature.com/articles/s41598-022-12196-3
13• A novel approach for engineering efficient nanofluids by radiolysis. Maaza, M., Khamliche, T., Akbari, M.
Nature scientific Reports, 12, 10767 (2022). https://www.nature.com/articles/s41598-022-14540-z
14• Physical properties of computationally informed phyto-engineered 2-D nanoscaled hydronium jarosite
N. Botha, M. Maaza et al,
Nature scientific Reports, (2023) 13:2442 | https://www.nature.com/articles/s41598-022-25723-z
15• Anderson localization of IR light in 1D nanosystems
M. Maaza, C. N. R. Rao,
Journal of the Optical Society of America A, Vol. 37, No. 11(2020) 10.1364/JOSAA.394917
16•Phase transition in a single VO2 nano-crystal: Femtosecond tunable optoelectronic nano-gating Maaza, M., Simo, A., Itani, B.M., ...Doyle, T.B., Luk'Yanchuk, I.
Journal of Nanoparticle Research, 2014, 16(5), 2397/ 10.1007/s11051-014-2397-z
17•Submicronic VO2-PVP composites coatings for smart windows applications and solar heat management Madida, I.G., Simo, A., Sone, B., ...Thema, F.T., Maaza, M.
Solar Energy, 2014, 107, pp. 758–769/10.1016/j.solener.2014.06.025
18• VO2 nanostructures based chemiresistors for low power energy consumption hydrogen gas sensing Simo, A., Mwakikunga, B., Sone, B.T., Madjoe, R., Maaza, M.
International J. Hydrogen Energy, 39(15), pp. 8147–8157(2014)/ 10.1016/j.ijhydene.2014.03.037
20• Towards Room Temperature Thermochromic Coatings with controllable NIR-IR modulation for solar heat management & smart windows applications,
B. S. Khanyile, N. Numan, A. Simo, M. Nkosi, C. B. Mtshali, Z. Khumalo, I. G. Madiba, B. Mabakachaba, H. Swart, E. Coetsee-Hugo, Mart-Mari Duvenhage, E. Lee, M. Henini, A. Gibaud, M. Chaker, P. Rezaee, N. Lethole, M. Akbari, R. Morad & M. Maaza,
Nature Scientific Reports, 14, 2818 (2024). https://www.nature.com/articles/s41598-024-52021-7

https://scholar.google.com/citations?user=e6kaeYMAAAAJ&hl=zh-CN
https://www.scopus.com/results/authorNamesList.uri?st1=Maaza&st2=M&origin=searchauthorlookup