



SPEAKER BOOKLET

6th GAUTENG

ENVIRONMENTAL RESEARCH SYMPOSIUM

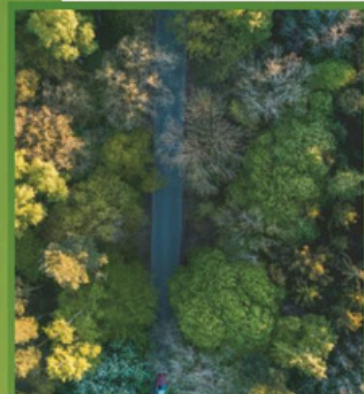
The Gauteng Environmental Research Symposium (GERS),
hosted by the Gauteng Department of Environment (GDEnv)
and the University of Johannesburg's Process, Energy &
Environmental Technology Station (UJ PEETS).

Theme: *Sustainability: Translation From Policy to Practice*
#RestoreOurEarth

Date: 22 October 2024

Venue: Hybrid event

**WATCH: A glimpse into what you can expect from the 6th
Annual Gauteng Environmental Research Symposium.**



GAUTENG
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REPUBLIC OF SOUTH AFRICA



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PROCESS ENERGY & ENVIRONMENTAL
TECHNOLOGY STATION



GGT2030
GROWING GAUTENG TOGETHER

PROGRAMME DIRECTOR



Nickey Janse van Rensburg

Quadruple helix collaboration: Looking back and looking forward after 30 years of democracy.

Nickey Janse van Rensburg heads up the University of Johannesburg's Process, Energy and Environmental Technology Station supporting emerging enterprises, driving technology innovation and knowledge transfer in the green economy. The Technology Station Program is an initiative of the Department of Science and Innovation, implemented via the Technology Innovation Agency to provide access to the expertise and facilities. Nickey is involved in several initiatives driving technology and social innovation at UJ, from building and racing solar powered vehicles across Africa, to establishing online urban farms in the Inner City, and developing technology that supports youth employment and massive data collection projects for the Gauteng Province. She has published more than 50 accredited journal papers, conference proceedings and book chapters on topics in renewable energy applications, appropriate technology development, and sustainable socio-technical systems. Her work has allowed her to direct resources at UJ to respond to the Sustainable Development Goals (SDGs) while supporting emerging enterprises within the green economy, focused on transformative knowledge creation and guided by a theory of change to support access to energy and water while driving environmental stewardship.

KEYNOTE SPEAKER



Erika Kraemer-Mbula

Erika is a Professor of Economics and is currently the Chair holder of the DSI/NRF Trilateral Research Chair in Transformative Innovation, the 4IR & Sustainable Development, the Fourth Industrial Revolution and Sustainable Development, based at the College of Business and Economics (University of Johannesburg) and in partnership with ACTS and SPRU. Her research unit at the University of Johannesburg is formed by a dynamic team of national and international researchers that engages in cutting-edge research; builds the capacity of younger scholars to help develop the next generation of African thinkers leading transformative

change; and engages with policy makers, key stakeholders and research partners, to influence policy change. Trained as an Economist, she holds a Masters in Science and Technology Policy by the Science and Policy Research Unit (University of Sussex), and a doctorate in Development Studies from the University of Oxford. Her work focuses on alternative development paths for African economies. She specialises in the analysis of innovation systems in connection to equitable development and inclusive development and has done pioneering work on innovation in the African informal sector.

PANELLISTS AND FACILITATORS

(In alphabetical order by surname)



Tobias Barnard

UbuntuBlu Mobile laboratory – Drone adaptation and configuration to sensor apparatus for on-site, real-time digitalised water quality test application

Prof Tobias Barnard is the Director of the Water and Health Research Centre in the Faculty of Health Science at the University of Johannesburg (UJ). He is from Bloemfontein in the Free State where he obtained his PhD in Biochemistry from the University of the Free State. He was recruited by the UJ as a post-doctoral fellow in 2006 and worked his way up to his current position. He has served on national and international boards and councils and committees and is a proud founding member of the South African Young Water Professionals. The Water and Health Research Centre team consists of staff and students with a wide variety of educational backgrounds to take research to potential commercial products, routine sample analysis and community engagement. Their research focuses on how pathogens enter, survive, and adapt in communities, especially related to water, sanitation and hygiene. The Centre translates this work into community engagement activities for which they received the UJ Service Excellence Award in Community Engagement in 2023. Most recently he was one of the founding members of the Creative Microbiology Creative Colab laboratory housed in the Faculty of Art, Design and Architecture, a lab created for using microbes for art. This year the second bioart exhibition will be held at the FADA art gallery on Bunting Road campus where two members of the Centre will have artworks.



Schalk Grobbelaar

What would happen if we didn't increase the use of timber in construction?

Dr Schalk Grobbelaar is a senior lecturer at the Graduate School of Technology Management, University of Pretoria. He specialises in Technology & Innovation Management and Risk Management. He is also the Chairperson of the York Timbers Chair in Wood Structural Engineering. The Chair aims to promote the adoption of structural wood products within the context of a sustainable, timber-based built environment and the wood-based bio-economy in South Africa. He is also heading a feasibility study for the Department of Trade, Industry and Competition to promote timber construction in South Africa. The Growing Timber Connections Timber Construction Conference, Colloquium and Design Competition are some initiatives enabled through these partnerships.



Kate Joseph

Considering the changing energy access landscape in Joburg: Successes & challenges linked to PV.

Kate Joseph is the Deputy Director for Strategy and Research within the City of Joburg's Group Strategy Policy Coordination and Relations Department. Her work contributes to the overarching long-term city development strategy. Her main areas of research are urban sustainability, governance and social inclusion. She also works on the City's customer satisfaction surveys. Kate has a Master Degree in Political Studies from the University of the Witwatersrand. She has worked for the City for six years, prior to which she worked in academia and marketing.



Anthony Kaziboni

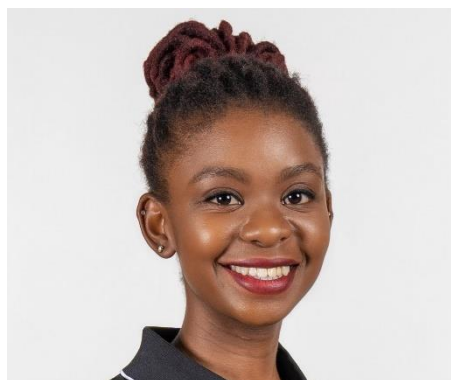
Dr Anthony Kaziboni is a Senior Researcher at the University of Johannesburg's (UJ) Centre for Social Development in Africa (CSDA), leading the Social, Economic & Environmental Justice thematic area. A political and critical sociologist, his research passionately investigates power dynamics in hydropolitics, migration, and social inequalities to influence policy and promote social change and development. Dr Kaziboni is a member of several professional associations, including the South African Sociological Association (SASA), the Water Institute of Southern Africa (WISA), and the Research Committee 46 of the International Sociological Association (ISA). His research excellence has been acknowledged internationally with the prestigious *Outstanding Early Career Award* presented by ISA's Research Committee 46 in 2018. Dr Kaziboni actively shares his insights through journal articles, book chapters, newspaper articles, and numerous television and radio interviews, both locally and internationally. He also serves on the editorial board of *Clinical Sociology: Research and Practice*.



Vhalinavho Khavhagali

Mr. Vhalinavho Khavhagali is a professional Scientist, with focus on Biodiversity, Climate Change Adaptation and Policy Management. Mr. Khavhagali holds a MSc degree from University of Cape Town, and currently enrolled for PhD at the University of Twente, in the Netherlands. Mr. Khavhagali has served in numerous environments, biodiversity and climate change portfolios. Country Facilitator - UK-PACT Programme; Deputy Director - Biodiversity Risk Management, and Director- Climate Change Adaptation, DFFE. Mr. Khavhagali has represented South Africa in various multilateral processes, CBD, UNFCCC, UNCCD. Under the UNFCCC he led negotiations under the Nairobi Work Programme for G77 & China; he also held the Co-Chair position of the Executive Committee for the WIM for loss and damage, under UNFCCC. He was instrumental in the establishment of the Paris Agreement and the National Determined Contributions for South Africa. He represented the country on co-operative biodiversity and climate change platforms, such as SADC, BRICS, Adaptation Futures and Resilient Cities. He is currently the Country Director for the International Union for Conservation of Nature in

South Africa, and the Regional Head: Climate Change for IUCN Eastern and Southern Africa. He is responsible for Organizational management and leadership, Country's programme of Work and strategic engagements; and programmatic initiatives and implementation, development and implementation of climate change in the ESARO Region.



Boitemogelo Kwakwa

Environmental Stewardship: Water & Air Quality

Boitemogelo Kwakwa is a Programme Manager at the University of Johannesburg's Process, Energy & Environmental Technology Station (UJ PEETS) with a strong focus on air quality, sustainability, and climate change advisory. She is a PhD Candidate, holding an MSc in Geography (Waste Management) and is registered with SACNASP as a Certificated Scientist. Boitemogelo has experience in leading environmental projects, developing sustainability strategies, and collaborating with international organizations on policy development.



Gordon Peter Dacomb Laing

Sustainable Transport: Affordable Access to Opportunity.

A registered professional Civil Engineer with an MBA and B Comm, and a Fellow of the Institute of Directors Southern Africa Gordon currently consults on the development of Sustainability Strategies for corporates, local / provincial authorities and NGOs with a focus on Sustainable Transport and Social Impact. Recent clients include the World Wide Fund for Nature, the Cities of Cape Town, Johannesburg and Tshwane, the National Departments of Transport and Forestry, Fisheries and Environment, the Western Cape Government Department of Transport and Public Works and the Gautrain Management Agency. I also facilitate Flawless Consulting (recent clients include Engen, Standard Bank, Hollard Insurance and Old Mutual). My philosophy regarding sustainability is that there is only one planet that can support us and a systemic approach is essential. Thus, shifting the approach of people and organisations to both individual and broad responsibility is key to nurturing the legacy we leave.



Marc Leroy

Environmental Impacts in Gauteng: Actual and Potential

I have a Masters in Environmental Science from Wits university where I studied the distribution of alien plant species on the Sabie river in the Kruger Park. After graduating I worked as a botanist for the Limpopo Provincial government. During this time, I became involved in species modelling and Conservation planning. I then moved to the Gauteng province where I started as an environmental impact assessor at the then GDACE. After a number of years of reviewing EIA applications, I moved to Environmental Policy planning and coordination to work as the Environmental Information Manager. I use my gained experience to help source, ensure the veracity of, analyse, collate, manage and disseminate environmental information for evidence based environmental decision making. During my tenure I have completed amongst others: the technical update of the GPEMF (2021); updated and enhanced the 1:50 000 rivers in the province; developed a process to measure the cumulative impact of Environmental decisions; updated to SDI compliance the metadata of the Department's spatial data; and assisted on the numerous strategic projects. I would call myself an environmental data analyst as I love finding stories in data.



Sampson Mamphweli

The future power system with reference to the role of renewable energy

Prof Mamphweli is the Head of the Department of Science and Innovation's Energy Secretariat at the South African National Energy Development Institute. His role is to Science and Engineering National Energy Flagship Research Development and Innovation programmes. The programmes include the Coal CO₂ to X programme, the Renewable and Sustainable Energy Hub and Spokes Programme, Hydrogen South Africa and Energy storage. Prof Mamphweli possess a PhD in Physics, he has published close to 100 research articles including four book chapters, he has accumulated more than 2000 research citations (Google scholar), He has supervised more than 26 Masters and PhD Students to completion. He was recognized by Stellenbosch University as Full Professor of Process Engineering and gave Inaugural address

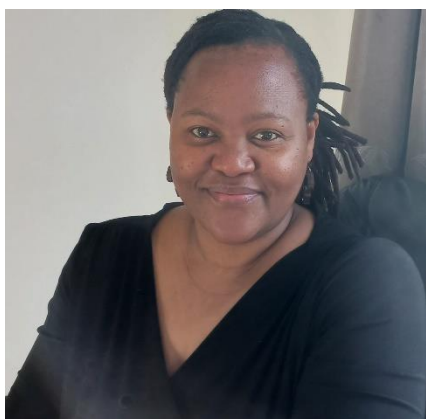
in 2018. He was also recognized by the University of Fort Hare as Associate Professor in 2015, and he was winner of the University of Fort Hare's Vice Chancellor's emerging researcher medal in 2012. He graduated Masters with distinction from the University of Venda. Prof Mamphweli is currently appointed as an Extraordinary Professor in Chemical Engineering by Stellenbosch University. He is also appointed by Durban University of Technology as an Honorary Research Professor. He currently serves in various advisory committees and boards in the energy space, and he is a member of the President's Energy Crisis Committee workstream 7 that is dealing with data modelling and data repository.



Mmoto Masubelele

Dr Mmoto Masubelele is passionate about the protection of biodiversity and the benefit-sharing of ecosystem services from protected areas to communities. He has completed a PhD in Botany with a focus on long-term environmental and landscape change in 2012. He has been employed by South African National Parks (SANParks) since 2013, to lead the science & monitoring to support the restoration

efforts and evaluations of various land degradation frameworks and biodiversity monitoring programmes. Mmoto also has produced a few postgraduate (PhDs and Masters) students with whom he published on this topic and others (Green Militarization, Climate Change Adaptation and Mitigation) in various Universities in South Africa. He is a research fellow at the University of South Africa. He developed a keen interest in climate change and issues of sustainability in order for the protected areas to support the nationally determined contributions. He initiated and led the development of climate change adaptation and mitigation in national parks in South Africa. SANParks carbon footprint assessment and emissions reduction report that was completed in 2020. Mmoto is in the process of finalizing the park management perceptions on climate change vulnerability report that is amongst the first to holistically look at the vulnerability of biodiversity, cultural heritage, tourism and infrastructure as well as neighbouring communities together.



Bakang Moeng

Highly motivated and deeply passionate about sustainability, Bakang Moeng is a trailblazer in developing the Green Building Industry in South Africa. Fulfilling the role of Manager: Public Sector Advocacy & Sustainability at the Green Building Council of South Africa (GBCSA), Bakang has robust technical knowledge acquired over 18 years in the Built Environment. With a background in architecture and over a decade of experience as a Sustainability Consultant, she has been a driving force in advancing green practices within the industry. Bakang's commitment to sustainability is evident in her dynamic career, making her a valuable asset to the GBCSA and a key figure in shaping the future of sustainable building practices in the region.



Ndivile Mokoena

Scaling Urban Nature-based Solutions for Climate Adaptation in Sub-Saharan Africa

Ndivile is a co-Director for GenderCC SA - Woman for Climate Justice who has vast experience on environment, climate change, gender, and social issues, started working on these subjects in 2010 when joined Earthlife Africa, JHB' women's forum called – Women in Energy and climate change forum. Currently working as a Gender Equality & Social Inclusion (GESI) specialist. My work centres around policy advocacy on intersectional gender and social inclusion, running training and capacity building workshops for community organization, civil society, women organizations, women in church and government officials. Doing advocacy work on climate and gender justice nationally, regionally, and internationally at the United Nations Framework Convention on Climate Change (UNFCCC) platform, through networking and partner organizations. Passionate worker and specialist in the field of Gender Equality, Climate & Social Justice with a high level of integrity. A good communicator, team player with good interpersonal skills. Fair leadership, negotiation, and problem-solving skills with a flair of creativity.



Clarissa Muir

Clarissa is currently a lecturer within the Department of Strategic Communication at the University of Johannesburg. She lectures both on undergraduate and postgraduate level in Strategic Communication and supervises postgraduate research studies. She has completed a PhD study entitled: *Corporate sustainability and making meaning of organisational purpose: A case study of South African medical aid service providers*. Her current research continues into the fields of sustainability, organisational purpose and the creation of a Shared Value approach. She has presented her work at both national and international conferences. Clarissa has been extensively involved in corporate training and workshop facilitation for some well-known brands in South Africa. For some of these brands it entailed programme development and accreditation by the Marketing Association of South Africa (MASA), resulting in individuals acquiring chartered marketer status. She has also held a full-time lecturing position at the University of Pretoria and was National Academic Navigator at Vega School.



Peter Mukoma

Peter works at the CSIR Energy Centre and is currently leading a team of researchers in the Energy Systems and Industry research groups focusing on energy system planning and the Just Energy Transition. He holds a doctorate in Chemical Engineering from Wits University with further professional training in Project Management, Carbon Management, Energy Management, Sustainable Energy Financing, Measurement & Verification (M&V), and Power System Flexible operations. Peter is an experienced engineer with 20 years of experience working in several industries including lead-acid battery manufacturing, Academic, Process Engineering Consulting, and Energy Management. For the last 12 years, he has been working in the South African energy sector specifically developing solutions for reducing energy demand and gaining knowledge in renewable energy technologies, enabling policies, and transition issues. He has strong strategic planning and management skills, experienced in leading research strategies and human capital development in energy-related projects. His research interests include the

development of sustainable energy solutions integrating **renewable energy supply technologies, energy storage** (batteries and hydrogen), and **demand-side management strategies** (energy efficiency and demand response).



Rodgers Musiyarira

Unlocking Gauteng's Energy Potential: The Role of a Provincial Energy Aggregator in Accelerating Decentralized Renewable Systems

Rodgers Musiyarira currently works at the Gauteng Provincial Government's Energy Office, in the Department of Cooperative Governance and Traditional Affairs, where he plays a key role in shaping and implementing energy strategies. From the development of the Gauteng Integrated Energy Strategy to the Gauteng Energy Security Strategy and Implementation Plan, Rodgers was involved. He is currently pursuing his PhD in Energy Studies at the University of Johannesburg, focusing on his thesis titled, *"The Role of Energy Storage for Municipal Electricity Distributors—Case of City of Johannesburg."* His academic and professional interests center on sustainable energy solutions, particularly in the integration of energy storage systems to enhance municipal electricity distribution.



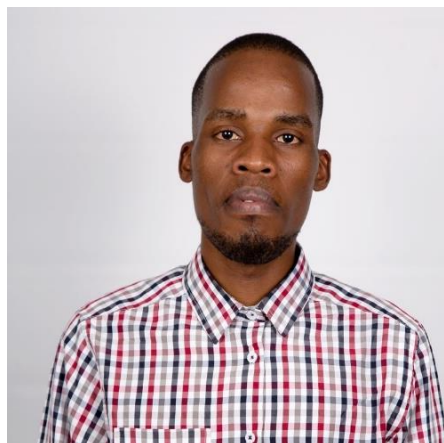
Innocent Musonda

Leveraging digital technologies for a circular economy: A Wood to Wood Valorisation Project

Prof I Musonda Innocent, Ph.D. (Eng. Man), holds a PhD in Engineering Management and qualifications in construction management and civil engineering. He is a registered Civil Engineer (Zambia), a Construction Manager (South Africa), and a full member of the Chartered Institute of Building (CIOB-UK) and the International Council for Research and Innovation in Building and Construction (CIB). He has worked for the public and private sectors in Southern Africa.

Innocent is currently a Professor of Construction Project Management, invited speaker,

founder, and director of the Centre for Applied Research and Innovation in the Built Environment (CARINBE) based at the University of Johannesburg.



Kopano Ntsoane

Guidelines and Options for Incorporating Nature-based Solutions in Cities' Planning, Budgeting, and Implementation Practices.

Kopano Ntsoane is a researcher in the South African Cities Network's Policy Research and Advocacy unit. He provides support to cities and allied organisations on various projects initiated by the SACN. His core focus is local economic development, expanded economic participation, and urban politics and governance. He is currently working on projects relating to productive and sustainable cities, including local labour markets analysis, skills development and the Just Transition, nature-based solutions for cities, and informal economies.



Mpho Primus

The Future of Conservation: Leveraging AI and Data for Sustainable Outcomes

Prof. Mpho Primus is an NRF-rated researcher specializing in computational linguistics and serves as the co-director at the Institute for Intelligent Systems, University of Johannesburg. She is the founder of Primus Technology Hub, a boutique consulting and advisory firm specialising in data strategy. She is also a trustee on the IDEMIA Black Women's Ownership Trust and a member of the advisory board for the Pan African Information Communication Technology Association. Prof. Primus is a L'Oreal Women in Science Fellow and is a recipient of the South African Department of Science and Technology, Women in Science Award. She is also a recipient of the 2022 NRF Research Excellence Award for Early Career/Emerging Researchers. She has recently been named as one of the 100 Influential Women in Tech in South Africa.

Abel Ramoelo



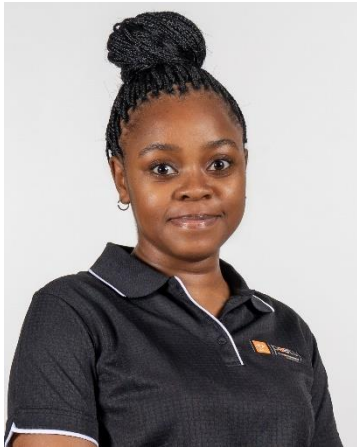
Abel Ramoelo is the Director of the Centre for Environmental Studies and an Associate Professor at the Department of Geography, Geoinformatics and Meteorology at the University of Pretoria. Abel completed his undergraduate and postgraduate degrees in Environmental Sciences at the University of Venda in 2003 and 2004, respectively. He then completed his MSc in Geoinformation Science and Earth Observation for Environmental Management and Modelling (GEM-MSc) at four European Universities, namely Southampton, Lund, Warsaw, and the University of Twente (ITC). Abel holds a PhD in Geoinformation Science and Earth Observation from the University of Twente's Faculty of Geoinformation Science and Earth Observation (UT-ITC). Abel's research interests include using remote sensing data at various scales to monitor and assess the environment. His research informs decisions about natural resource and environmental issues such as rangelands, biodiversity conservation, land degradation, climate change impact, water resources, and food security.

Isaac Rampedi



Understanding the characteristics and recycling knowledge amongst selected small businesses in the townships of the Gauteng province, South Africa.

Prof. Isaac T. Rampedi undertakes research in different areas of environmental management, notably environmental assessments, environmental quality, and the sustainability of municipal solid waste (MSW) management and its recycling potential. His research on municipal waste management is asking questions about its effectiveness and efficiency and how it can be minimized by the adoption of circular economy principles that entail waste recovery via industrial symbiosis and repurposing, thus prolonging its utilization in the production value chain and lessening pressure on the extraction of virgin natural resources. Furthermore, addressing the achievement of some of the 17 Sustainable Development Goals informs many of his research objectives, including efforts to reach set targets and associated actions in keeping with the mission of the United Nations Department of Economic and Social Affairs.



Mbali Zwane

Environmental Stewardship: Water & Air Quality

Miss Mbali Zwane is the acting programme manager for the resource efficiency and circular economy at the University of Johannesburg's Process Energy and Environmental Technology Station. She holds a master's degree in environmental management from the University of Johannesburg, focusing on applying circular economy principles in the management of e-waste. Her expertise lies in waste management, resource efficiency and the circular economy.

2024 GERS VI RESEARCH COMPETITION WINNER



Nicholas Sukumani

Assessing the socio-economic and environmental impacts of the weigh and pay model: A case study of Gcwalisa shop in Alexandra in Gauteng province

Abstract: This research investigates the effectiveness of Gcwalisa's model in addressing food insecurity and environmental degradation in Alexandra Township, a densely populated and economically disadvantaged area in northern Johannesburg. Gcwalisa operates on a weigh-and-pay system, making essential food items such as maize meal, rice, and sugar beans affordable for the township's residents, who are often faced with high rates of unemployment and limited access to resources, by allowing consumers to purchase food in quantities that suit their financial means. Gcwalisa's model promotes environmental sustainability through the adoption of reusable jars, thereby reducing reliance on single-use plastic packaging. Aiming to minimize waste and encourage the recycling and reuse of materials. The research will delve into the socio-economic impacts of this model, examining how it influences household food security and community well-being in Alexandra. It will also assess the environmental implications by measuring the reduction in single-use plastic waste and evaluating the adoption rates and effectiveness of reusable packaging among consumers. The study will explore consumer perceptions, attitudes, and behaviours toward the use of reusable jars, providing insights into the community's willingness to engage in sustainable practices. It will identify the challenges Gcwalisa faces in implementing its model, including financial, and cultural barriers, and highlight potential opportunities for scaling and improving the initiative.

The 6th annual Gauteng Research Symposium was hosted by Gauteng Department of Environment in partnership with the University of Johannesburg Process, Energy and Environment Technology Station and supported by:



a world class African city
City of Johannesburg



Council for Scientific and
Industrial Research



Department of Cooperative
Governance and Traditional
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International Union for
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