

Happy Holidays

Coaltech

The Coaltech Research Association NPC

Newsletter

2023

Q4

Introducing Phillip Mulder - New Coaltech Board Chairperson



Phillip Mulder, Seriti's Chief Technical Officer, and new Coaltech Board Chairperson, brings a wealth of operations and technical environment knowledge and experience to the Board.

Mulder describes himself as a confident, independent self-starter and motivated individual with a purpose. "My purpose is to influence the lives of others by living by example."

His operational experience has developed his ability to motivate people and he believes his commitment facilitates the synergy of individuals to form an effective team.

His technical abilities extend to strategic leadership skills and a determination to implement world class business planning technologies and processes.

Mulder's operational experience in coal mining is extensive and ranges from underground and surface mining, project management, mine design and scheduling, resource to reserve declarations, technical auditing and financial valuation, mining method trade-offs, mine planning systems and technology.

He has a degree in Mining Engineering from the University of Pretoria, Masters in Business Administration from the University of Stellenbosch and a Mine Managers Certificate of Competence.

In his current position at Seriti he is responsible for Group Safety, medium to long term strategic life of mine planning, Resource Geology, Engineering and Asset Management, Metallurgy and Mine Closure.

Mulder says he is excited about his role in Coaltech. "Filling the shoes of the outgoing Coaltech chairperson, David Power, is a big challenge, but I look forward to continuing his work of growing the organisation further while future-proofing it."



The year that was 2023



As we approach the end of 2023, I am pleased to reflect on the progress we have made with our research programme. This year we have seen significant advances in safety, coal processing, and environmental protection. Some examples include the work done on life sustainability in underground refuge bays, the development of a guideline for mine closure relinquishment criteria, and unlocking obstacles to the commercialisation of eutectic freeze crystallisation. (Visit the Coaltech website for further details.) In the coming months a number of projects will also be finalised. I would like to thank all the researchers, engineers, mine personnel, and other professionals who made this research and development possible. Your dedication and hard work is making a real difference in the lives of coal miners and their communities. I also want to thank Eskom and the coal mining industry for their support of R&D. The industry's investment in R&D is essential to ensure that coal mining remains a safe, productive, and an environmentally responsible industry.



Congratulations

Deanship - Facility Natural & Agriculture science at the University of the Free State



The University of the Free State (UFS) has appointed Prof Paul Oberholster as Dean: Faculty of Natural and Agricultural Sciences as of 1 January 2024. In 2019, Prof Oberholster joined the UFS as Director of the Centre for Environmental Management. He also also received the National Science and Technology Foundation (NSTF) Award in the category Water Research Commission, with a focus on natural-based passive phycoremediation and phytoremediation treatment technology. In 2022, he was elected as a member of the Academy of Science of South Africa (ASSAf) in recognition of his academic achievements in South Africa, and in 2023 he was appointed as the Managing Director of the Ecological Engineering Institute of Africa (EEIA).

Passing of Johan de Korte - A friend & colleague



It is with great sadness that we inform you of the passing of Johan de Korte, on the Thursday, 26 October 2023.

Johan was a valuable contributor to the Coal Industry and will be sorely missed.

Our thoughts & prayers go out to his wife & family.

Farewell Ritva Muhlbauer Environment Steer Com Chairperson, retiring at the end of the year



Who's new



Naadira Haniff - New Director Representative Thungela



Naadira is the Mining Technical Support Manager at Thungela Resources, working on technical assessments, estimation & resource planning and development. She has over 20 years' experience in the mining industry. Previously she was Project Lead Geologist at BHP Billiton, Resource Geologist at Anglo Coal Gas Projects and prior to that she did resource and exploration work in coal. Naadira has also held positions of exploration and production geologist in the gold mining industry.

Kelley Reynolds-Clausen - New Environment Steer Com Chairperson



Kelley is a senior consultant at Eskom Research, Testing and Demonstration, managing ash and FGD gypsum research projects. She started working for Eskom in 1993 as a microbiologist and progressed to water and waste research and consulting for the organisation. Her interests include ash utilisation and beneficiation, waste management and industrial microbiology. She is a registered scientist with SACNASP, the Vice President of the South African Coal Ash Association and Vice Chair for the Coaltech Environmental Steering Committee. She holds a PhD in Microbiology from Stellenbosch University.



FINAL RESEARCH PROTECTS FOR THE LAST QUARTER OF 2023



Environment

Agreed relinquishment criteria for mine closure in South Africa Guideline

By Jones & Wagener (Pty) Ltd

Few mines in South Africa have obtained closure certificates. A key finding from this project is that there is a lack of specific guidance in the vast closure related legislative landscape. The aim of this project is to provide the guidance on the best mechanism for reaching agreed relinquishment criteria for mine closure in South Africa. Per definition, "Relinquishment (transition of ownership and responsibility for the land to a third party) is often discussed in the context of post-closure land use".

[Learn more here](#)

Fabricated soils from South African coal waste

By Juarez Amaral Filho; Mariette Smart; Jessica Weiler; Thanos Kotsiopoulos; Susan Harrison - Centre for Bioprocess Engineering Research, CeBER, Department of Chemical Engineering, University of Cape Town

Coal processing in South Africa results in coal discard dumps and fine coal waste storage facilities. This study builds on earlier work that, following further recovery of coal, the bulk ash-rich fine coal waste can be re-purposed into a fabricated soil that supports the growth of grasses typically used in mine rehabilitation. The study further explores the type of fine coal waste used and the soil design and their effect of soil properties as well as the value of re-instating a soil microbiome through inoculation of the fabricated soils on manufacture.

[Learn more here](#)



Processing

Hydrothermal treatment of coal discards and sewage sludge for production of advanced materials

Prepared by Gentil Mwengula Kahilu - School of Chemical and Metallurgical Engineering, Faculty of Engineering and the Built Environment, University of the Witwatersrand, Johannesburg, South Africa Supervisor: Prof Jean Mulopo, Co-Supervisor: Prof Samson Bada

The disposal of coal discards (CD) and sewage sludge (SS) is a substantial problem to waste management in coal beneficiation and wastewater treatment plants (WWTP). This work investigates essential aspects for contributing to the reduction of environmental effects, with a particular emphasis on the hydrothermal carbonization (HTC) technology for the synergetic treatment of CD and SS to produce value-added carbonaceous materials (CM).

[Learn more here](#)

The alternative uses of coal in the production of advanced materials and lightweight products for the sustainability of the South African coal industry

Report Chair: Samson BADA, Clean Coal Technology Group, University of the Witwatersrand

Report Chapter Leads: Samson BADA, Jibril Abdulsalam, and Orevaoghene Eterigho-Ikelegbe, - University of the Witwatersrand

With the aim to lead the country into a new carbon-based economy this report looks to reinvent applications for coal utilisation beyond combustion and energy generation. This also has a role in sustaining the circular economy concept envisioned by this country. Several new carbon-based industries using coal fines, discards or waste as carbon ore for the advanced and lightweight materials are examined. In this context, the report is a thorough review of emerging technologies to use discarded products highlighting coal fines or coal slurries as feedstock for high-quality and valuable products.

[Learn more here](#)

Mining

Assessing the life-sustainability of underground Refuge Bays in South African collieries

By Inus Labuschagne and Tjaart Cronje

Following a request by the South African Colliery Managers Association (SACMA), Coaltech has investigated and assessed Refuge Bay designs, construction, and equipment by referencing legal and other requirements as well as international practices in the use of Refuge Bays as places of safety for life-sustainability during emergencies. This report summarises the current situation in some of the South African collieries as well as highlighting various leading practices identified. This assessment identified some areas of improvement for Refuge Bay designs, construction, and maintenance of facilities for life-sustaining conditions within Refuge Bays of the South African coal mining industry.

[Learn more here](#)



Environment

Processing

Mining

Coaltech INVITES YOU TO THE Colloquium

on 31 May 2024

The purpose of the Colloquium is to disseminate information about the Association's work to all Stakeholders in the Coal Industry.

Topics for the day will cover Environment, Coal Processing, Mining & Engineering.

VENUE
The Ridge Casino Dome
Cnr N4 Highway & Mandela Street, Mandela St, eMalahleni, 1038

Colloquium 31 May 2024

INVITATION TO EXHIBIT

Coaltech coordinates research and development for the broader coal mining community in South Africa, through funding from South African coal mining companies and Eskom. Topics for the day will cover the following areas: Mining, Coal Processing, and Environment.

The colloquium serves as a platform for Coaltech to report to the coal mining industry stakeholder on the progress of the projects being undertaken during the year and to inform interested parties on the status of the industry with respect to needs in research and development and what is being done to address these needs.

We will provide stands at the venue to enable suppliers to exhibit their products or services.

[Learn more here](#)

CEO Job Vacancy

Coaltech is seeking a new CEO.

Coaltech has an opening for the positions of Chief Executive Officer. The candidate should have at least twenty (20) years' experience in the mining industry, with a minimum of two years in mining related research or project management. For More information, please download the attached Job Spec. Applications should be emailed to cbergman@coaltech.co.za and include an updated CV, with your address, contact numbers and ID, before 31 December 2023.

CEO Position Spec



Happy Holidays

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