



AMGC News

Director General's Message



In the month of June 2022 the Director General participated in the kick-off meeting of the AfricaMaVal project and being appointed as a member of the Advisory Board to the project at the event held in Windhoek Namibia. The training activities also continued with courses on petrological sample analytical techniques & gemstone characterization and identification techniques by the Mineralogy Petrology and Gemmology Department; practical mineral processing and basic mineral processing flowsheet & general sampling and sample preparation techniques for laboratory analysis by Mineral Processing and Small-scale Mining Department; quality control and quality assurance in laboratories; and the completion of the online training on Development Minerals of Uganda by Geoinformation Department.

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A Courtesy Visit to the Charge' D'affairs of the Sudan Embassy in Dar es Salaam, Tanzania



Mr. Ibrahim Shaddad, the Director General of the African Minerals and Geosciences Centre (AMGC) paid a courtesy visit to H.E. Mr. Asm Mustafa, the Charge' d'affairs of the Sudan Embassy in Dar es Salaam, Tanzania on 10th June, 2022. Mr. Ibrahim Shaddad expressed much appreciation and gratitude for the arrangement which have been done to send the annual subscription of Ministry of Minerals on behalf of the Government of the Sudan through the Ministry of Foreign Affairs of Sudan to the Centre. H.E. Mr. Asm Mustafa assured the

sustainable support of the Sudan to AMGC and expressed his high concern to enhance the existing excellent and fruitful working relationship and cooperation that the Sudan and AMGC share for strengthening beneficial partnerships to push for the Centre's mission and mandate in serving the Mining Sector and Geosciences community in the Sudan and African Countries. It is worth mentioning Sudan is the last member state to join the work force of AMGC in August 2010. The Sudan chaired the AMGC 33rd and 39th Governing Council Meetings hosted in Khartoum in 2013 and 2019 respectively

Sincerely recognizes the outstanding commitments and obligations of the Government of Sudan to the Centre that enable it to implement its activities to its highest peak. Sudan has been unreserved supporting the Centre in overcoming repeated financial constrain that the Centre is facing. Sudan ranks the second after Tanzania the host country of AMGC in utilizing the AMGC's mineral services and in this regard the Sudan contributes honorably in the 40% annual operational budget to be generated by the Centre. Sudan is leading in timely fulfilling its annual subscription to the Centre and injecting additional funds through maximizing its beneficiation from mineral services particularly paid training courses provided by the Centre. Sudan requested 76 on job practical training opportunities during the financial year July 2021-June 2022. Since Mr. Ibrahim Shaddad, the current Director General of AMGC has been fully on board in July 2015, a total of 444 paid training opportunities were provided to Sudanese professionals from Geological Research Authority of Sudan (GRAS), Sudanese Mineral Resources Company (SMRC), Ariab Mining Company (AMC) and Sudan's Gold Refinery. The Sudanese professionals have been trained in various on-job-training courses at the AMGC based in Dar es Salaam, Tanzania and one paid outreach training course held at the premises of GRAS in Khartoum.

Training course on Petrological Sample Preparation and Analytical Techniques



Certificate hand out ceremony for two Geologists from the Directorate of Geological Survey (DGS), Uganda, the member state of AMGC. The two professionals who are Mrs. Molly Bakka Male and Ms. Stella Nankinga attended a training course on Petrological Sample Preparation and Analytical Techniques from 30th May to 10th June 2022.

Training courses on Petrological Sample Preparation & Analytical Techniques and Practical Mineral Processing and the Basic Mineral Processing Flowsheet



Certificate hand out ceremony for three (3) Geologists from the National Minerals Agency (NMA), Sierra Leone. Two of the professionals attended a training course on Petrological Sample Preparation and Analytical Techniques from 30th May to 10th June 2022. The two professionals are Mr. Ibrahim Jalloh and Mrs. Nancy Musu Tucker. The 3rd professional who is Mr. Desmond Ray Kanu, attended a training course on Practical Mineral Processing and the Basic Mineral Processing Flowsheet from 30th May to 10th June 2022.

Trainings on Gemstone Characterization & Identification and Gemstones Value Addition Techniques



The African Minerals and Geosciences Centre (AMGC) received two British Nigerian trainees who are Mrs. Nkem Anagor and Ms Toni Olokun from Nigeria/UK. AMGC through its Mineralogy, Petrology and Gemmology Department is providing them two practical training courses for four consecutive weeks with the following details:- **COURSE 1: Gemstone Characterization and Identification Techniques** for two weeks training from 20 June to 01 July 2022 and **COURSE 2: Gemstones Value Addition Techniques** from 04 July to 15 July 2022. The two trainings will give basic knowledge and skills on how to identify gemstones and basic skills on how to cut gemstones using different cutting techniques. The courses are held at the AMGC premises in Kunduchi Beach Area, Dar es Salaam, Tanzania.

Congratulatory Message



The Management of African Minerals and Geosciences Centre has the honour to congratulate Dr. Marit Kitaw for being appointed Interim Director of the African Minerals Development Centre (AMDC). AMDC is currently based at the AUC headquarters in Addis-Ababa, Ethiopia, until the time the situation in Conakry, Guinea stabilizes. AMGC is looking forward to a continued working relationship between the two sisterly institutions especially in the mineral community.



The Management of African Minerals and Geosciences Centre has the honour to congratulate Dr. Alhaji Tunde Arisekola (FNMGS) for being appointed by the United Nations Development Programme, UNDP, as the Senior Advisor on Geological and Mineral Information effective from 17th May, 2022.

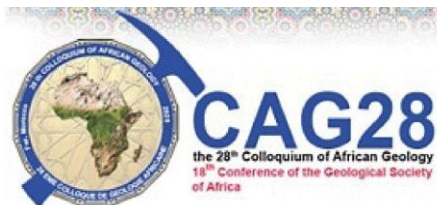
AfricaMaVal Project Kick-off Meeting



AMGC Director General, Mr. Ibrahim Shaddad participated in the Kick-off of the AfricaMaVal Project in Windhoek during 23-24 June 2022. The Director General represented AMGC as a member of the Advisory Board of the AfricaMaVal Project and delivered AMGC's Presentation entitled Role of AMGC in Serving Mining Sector & Geosciences Community in Africa. The AfricaMaVal Project, is to build forthcoming EU and Africa business network on the whole CRM value chains, to develop a strategy on the integration of identified and emerging raw materials value

chains for the energy and digital transition and to assess the 100 responsible investment opportunities in Africa proposed at the end of the project.

The 28th Colloquium of African Geology CAG28



July 6th-8th, 2022

Online Conference



CAG28 will be held online from the 6th to 8th July 2022. Please visit: <http://cag28.gsafr.org/> for registration and further information.

Training on General Sampling and Sample Preparation for Laboratory Analysis



Certificate hand out ceremony for four professionals from Ariab Mining Company Ltd (AMC), Sudan. The professionals are: Mohamed Elata Zaid, Ali Mohamed Ali, Haikal Musa Adam and Ahmed Salih Ahmed. The ceremony was officiated by H.E. Mr. Asm Mustafa, the Charge' d'affairs of the Sudan Embassy in Dar es Salaam, Tanzania. These professionals participated in a two-week training course on General Sampling Techniques and Sample Preparation for Laboratory Analysis.

Training on Quality Control and Quality Assurance in Laboratories



African Minerals and Geosciences Centre received Mr. Solomon Sulaiman Amadu, a Chemist from National Minerals Agency (NMA) in Sierra Leone. Mr. Solomon is participating in a two-week training course on Quality Control and Quality Assurance in Laboratories. He is completing a series of training for capacity building which has been provided by the Centre to other four trainees who came earlier from the same government institution in Sierra Leone. The training is conducted at African Minerals and Geosciences Centre (AMGC) from 13-24 June 2022.

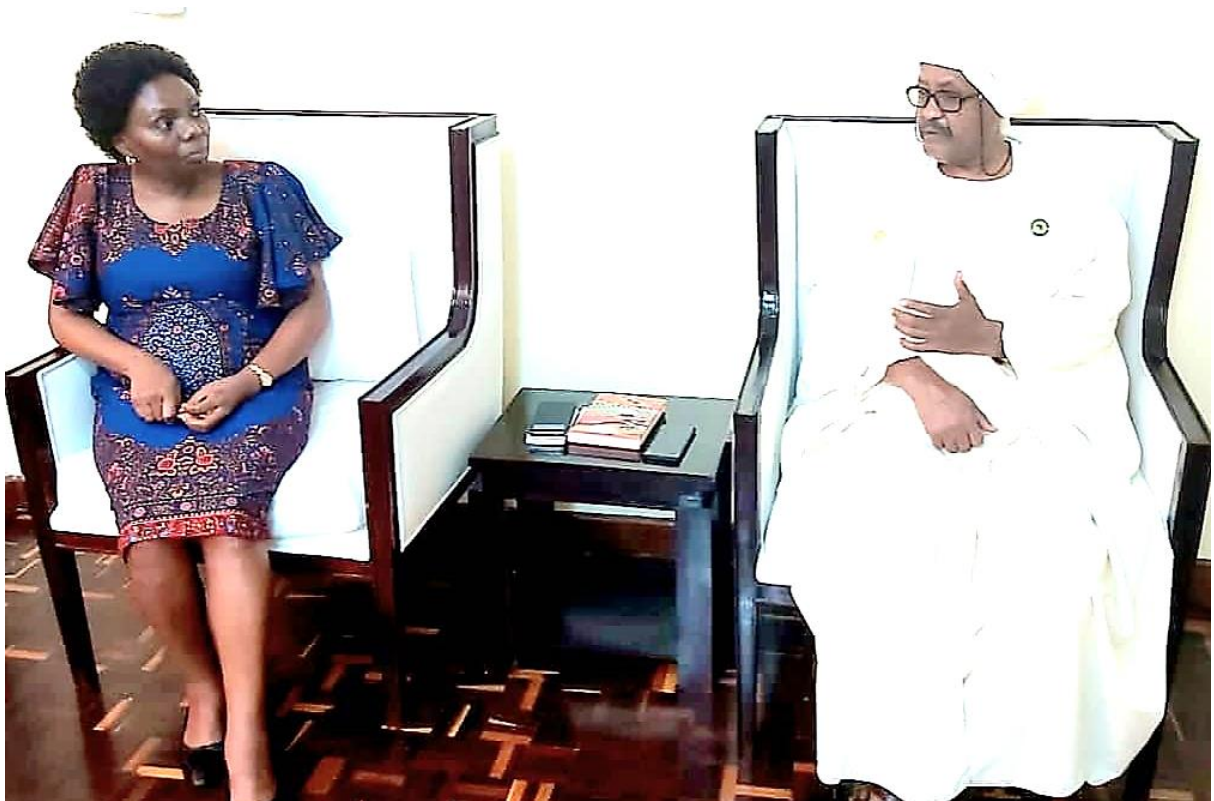
Africa Association of Remote Sensing and Environment



The Africa Association of Remote Sensing and Environment (AARSE) 2022 conference, which was postponed due to the pandemic of Covid-19 is scheduled to take place on the dates of 24th -28th October 2022 in Kigali Rwanda. The exciting academic, scientific research and policy brief conference under the theme Space and Geospatial Technologies for the Africa we want will be a major event in the African and international community of Earth observation and Geo-spatial information science in

2022. This conference will be organized by AARSE and Institut d'Enseignement Supérieur de Ruhengeri (Ines-Ruhengeri) in partnership with the Rwanda Space Agency (RSA). For more information, contact jossam2003@ines.ac.rw or the conference website at www.aarse2022.org.

A Courtesy Visit to the Charge d'affaires of Kenya High Commission to Tanzania



Mr. Ibrahim Shaddad, the Director General of the African Minerals and Geosciences Centre (AMGC) paid a courtesy visit to H.E. Ms Justina Miriti, the Charge d'affaires a.i. of Kenya High Commission to Tanzania, to express deep gratitude and appreciation for Kenya's fulfilment of its financial contributions through the esteemed Ministry of Petroleum and Mining of Kenya, which enabled the Centre to implement its activities to its highest peak. It is worth mentioning that Kenya is a leading AMGC's member state in paying timely its annual subscription to the Centre. H.E. Ms Justina Miriti was briefed among other issues recent developments of the Centre and the Director General of AMGC has extended an open invitation to H.E. Ms Justina Miriti to pay a familiarize visit to AMGC as soon as possible and in date and time convenient to her.

AMGC is looking forward to Kenya to maximize more and more its benefits from the spectrum of mineral services provided by the Centre. Kenya joined the Centre in July 2006 becoming the 7th member state, chaired the AMGC Governing Council and hosted the Policy Organ Meetings three times (May 2011, June 2014 and May 2015) and the coming one is expected to be hosted by Kenya, which has been chairing the Governing Council of AMGC since February 2019.

APPRECIATION & GRATITUDE

The African Minerals and Geosciences Centre (AMGC) would like to express its much appreciation and gratitude to Kenya, Sudan and Uganda, the member states of AMGC for fulfilling their financial commitments to the Centre during the fiscal year July 2021/June 22.



CONGRATULATIONS



**Happy 47th
Independence
Anniversary of
Mozambique, the
member state of AMGC**



NEW Training Courses

African Minerals and Geosciences Centre (AMGC) is pleased to announce the introduction of four new courses Geostatistics, Petroleum Sciences and Resource Estimation in collaboration with Khartoum based Consulting firm called **Knowledge and Training Centre (KTC)**. The course shall be facilitated by the Director of KTC, Dr. M. Zayed Awad, an eminent specialist in the areas of Geostatistics, resource evaluation, stratigraphy, reporting, training and mentoring, risk and decision analysis, petroleum economics, project management. The training course will be organized in Dar es Salaam at the AMGC training facilities. The following training courses are going to be offered through this collaboration.

1. Fundamental of Petroleum Economics

Duration: One Week

Course fee: US\$ 1,200

This course introduces the participants to requirements for conducting petroleum economics; different stages of the petroleum industry life cycle involving upstream, mid-stream and downstream sectors will be explained. Participants will learn how to construct a Cash Flow Model for oil and gas investment decision. They will also learn how to deal with the different financial components of petroleum cost, and classification of costs into OPEX and CAPEX. Net Cash Flow Stream analysis and computation of economic indicators (Yardsticks) such as NPV, IRR, PBP, MCE and DPI, and their interpretations are essential for petroleum investment decision-making. Cash Flow Adjustment using discount rates is also considered. Types of fiscal regimes will be explained, participant will also learn how to incorporate the fiscal parameters into a cash flow stream.

2. Geostatistical Mineral Resource Estimation

Duration: One Week

Course fee: US\$ 1,700

The course will focus on the fundamentals of Geostatistical application in mining that are required for domain specification that are required for mineral resource estimation and will include hands-on training with Geostatistical software. Geostatistical conditional Simulations may be used to assess the uncertainty associated with the Reserves Evaluation at exploration,

feasibility, and production stages. The simulations provide a range of potential reserves for the ore body's Tonnage, Metal Quantity and Recovered Grade.

3. Introduction to Oil and Gas Industry

DURATION: One Week

Course fee: US\$ 1,200

This course is designed for a wide-ranging of petroleum industry personnel. It is designed to provide green-hands technical, and a non-technical personnel with practical petroleum industry life cycle. The course covers the key phases of the exploration, development and production industry as well as transportation and refining of crudes oils.

4. Geostatistics for Mining - foundation Course

Duration: Two Weeks

Course fee: US\$ 2,000

Geostatistics, in combination with other statistical methods, offers a wide range of mathematical tools that can be used to analyze, model, provide estimates and assess uncertainties, for different types of spatial phenomena, for example, grades or geological features. The course will focus on the fundamentals of Geostatistics and statistics and will include hands-on training with Geostatistical software.

THE INSTRUCTOR



Dr. M. Zayed Awad, the former Sudanese Minister for Oil and Gas (September 2014-May 2017) BSc (Hons) from University of Khartoum, Sudan, MSc (Geol) from Technical University of Berlin (TU), PhD (Stratigraphy) from Technical University of Berlin (TU). Dr. Zayed is a university instructor with postgraduate qualifications in petroleum geology, stratigraphy, economic geology, Geostatistics, and relevant application soft wares. He has more than 35 years' experience in university teaching and more than 25 years worldwide experience in

the petroleum industry and training. He has supervised many MSc and PhD research students and reviewed several reports and research papers. He is the founder of Knowledge & Training Center (KTC) in Sudan, and he is active as a trainer since 2003. He worked on many projects and given training courses to hundreds of attendees on many aspects of geology. Dr. Zayed's skills are in Geostatistics, resource evaluation, stratigraphy, reporting, training and mentoring, risk and decision analysis, petroleum economics, project management. Dr. Zayed was the initiator and editor-in-Chief of the book titled "Petroleum Geology and Resources of the Sudan" published by Geozone (Berlin) in 2015.

LIST OF TRAINING COURSES

Tanzanian government issued a new directive on restrictions with regards to the COVID-19. All travelers coming to Tanzania will not be required COVID 19 Free Certificate if they have a valid full vaccination certificate. If one is not vaccinated a COVID 19 Free Certificate with PCR Test and will be subjected to screening and possible additional test at the airport with Rapid Antigen Test. Below is the list of the training courses offered by AMGC.

Those who are interested to participate in the training courses at AMGC facilities are advised to consult the airline they plan to travel with about the current requirements of travel to Tanzania when planning the trip to Dar es Salaam.

Training Topics	Duration	Fee
Finance and Administration Department		
Leadership and Management Skills Training Course	2 Weeks	\$800
Financial Management Skills Training Course	2 Weeks	\$800
Executive Secretarial Training Course	2 Weeks	\$800
Chemical and Environmental Department		
Spectrometric Methods of Analysis.	2 Weeks	\$800
Analysis of Gold and Other Base Metals	2 Weeks	\$800
Quality Management Section		
Laboratory Certification and Accreditation	2 Weeks	\$1,500
Modern Laboratory Management Methods	2 Weeks	\$800
Quality Control and Quality Assurance in Laboratories	2 Weeks	\$1,500
Mineralogy, Petrology and Gemology Department		
Mineralogical and Petrological Sample Preparation and Analytical Techniques	2 Weeks	\$800
Gemstone Identification Techniques	1 Week	\$400
Gemstone Value Addition Techniques	2 Weeks	\$800
Usage of Benchtop X-ray Diffraction (XRD)	2 Weeks	\$800
Gemstone formation, mode of occurrences and mining methods	2 Weeks	\$800
Industrial Minerals Application Department		
Pottery for Beginners	2 Weeks	\$800
Mould Making	2 Weeks	\$800
Forming Techniques	2 Weeks	\$800
Decorations in Pottery and Ceramics	2 Weeks	\$800
Bricks & Tiles Manufacturing [Clays]	2 Weeks	\$800
Glaze Formulation	2 Weeks	\$800
Body Composition Formulation	2 Weeks	\$800

Mineral Processing and Small-scale Mining Department		
Practical Mineral Processing and The Basic Mineral Processing Flowsheet	2 Weeks	\$800
Sampling and Sample Preparation for Laboratory Testing	2 Week	\$800
Artisanal and Small Scale Mining Activities	2 Weeks	\$800
Techniques of Gold Cyanidation	1 Week	\$400
Mineral Economics	2 Weeks	\$800
Metallurgical Balance and Process Evaluation	2 Weeks	\$800
Extractive Metallurgy – Metallic Ore Deposits, Metal Extraction and Purification Processes	2 Weeks	\$800
Environmental Management in Mining	1 Week	\$400
Geo-information Department		
GIS and Remote Sensing for Mineral Exploration and Geological Mapping	2 weeks	\$800
Best Practices in Mineral Resource Estimation	1 week	\$400
Geodatabase Development for Web mapping	2 weeks	\$800
GIS and Remote Sensing Application for Assessment and Mitigation of Geohazards	1 week	\$400
Integrated Mineral Exploration Techniques	2 weeks	\$800
GIS and Remote Sensing for Hydrological Applications	1 week	\$400
Open-Source GIS	2 weeks	\$800
Fundamental of Petroleum Economics	1 week	\$1,200
Geostatistical Mineral Resource Estimation	1 week	\$1,700
Introduction to Oil and Gas Industry	1 week	\$1,200
Geostatistics for Mining - foundation	2 weeks	\$2,000
Geoheritage / Geoparks	On Request	
Geo-safari – Geo-traverse across the Pan-African terrains: Tanzanian Craton, Greenstone belt, East African Rift Valley, the Kibaran and Mozambique belts.	On Request	



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Development***

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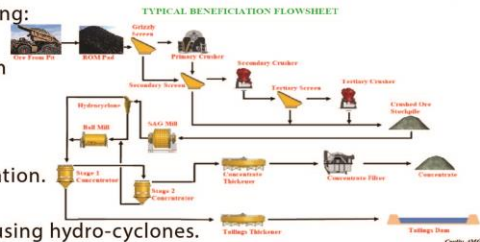


MINERAL PROCESSING & SMALL SCALE MINING SERVICES

The Mineral Processing Laboratory is equipped with a unique platform of laboratory and bench scale facilities for the development and testing of energy saving, low-cost crushing, grinding and concentration processes in environmental friendly ways.

Each aspect of beneficiation methods is optimized and incorporated into an overall process flow sheet development including:

- Ore crushing and grinding
- Bench scale gravity concentration
- Dense/heavy media separation
- Magnetic separation
- Froth flotation
- Dewatering or solid-liquid separation.
- Leaching (hydrometallurgy)
- Ore screening and classification using hydro-cyclones.



Training on different mineral techniques is provided. Laboratory facilities are used for practical demonstration during training. Currently the following courses offered:

1. Mineral Processing Basics – Beneficiation operations and Metallurgical Processes
2. General Sampling Technics and Sample Preparation for Laboratory Testing
3. Artisanal and Small Scale Mining Activities and Related Issues
4. Techniques of Gold Cyanidation for Small Scale Mining Operations
5. The Economics and Evaluation of the Minerals Industry
6. Metallurgical Balance and Process Control
7. Environmental Management in Mining



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