



AMGC Director General's Message



During the month of December 2023, AMGC received an account manager of Research Microscopy Solutions from ZEISS South Africa. Training courses were provided to Messrs Alberto Manuel and Helder Victorino from INAMI, Mozambique and Madam Diana Naburi from Tanzania at AMGC. The Director General of AMGC attended the 60th celebration of Kenya's Independence Day organized by the Kenya High Commission in Hyatt Regency Kilimanjaro Hotel, Dar es Salaam. AMGC participated in a three days sensitization training which was held at Arusha, Tanzania from 6th to 8th December 2023. The Director General of the AMGC sent appreciation and congratulatory letters to outgoing and incoming General Directors of Ethiopian Geological Institute and Mineral Industry Development Institute. AMGC received a delegation of four professionals and heads of different laboratory departments from Burundi.

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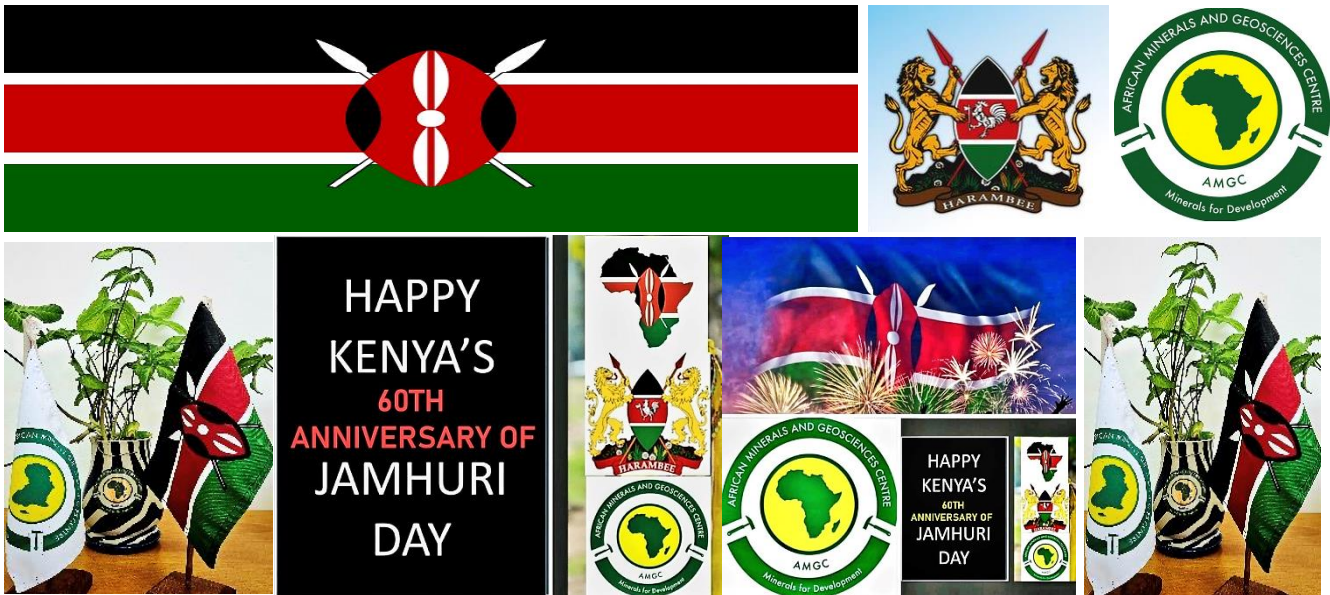
We make it visible.



On 7th December 2023, the African Minerals and Geosciences Centre received Mr. Randall Crisp from South Africa, who is the account manager of Research Microscopy Solutions for ZEISS South Africa. The aim of the visit was to introduce himself to AMGC management as a supplier of Axio Imager Microscope for the purpose of making collaboration on the area of petrographic microscopes which can be used in petrographic analysis at AMGC. The African Minerals and Geosciences Centre management has discussed with Mr. Randall Crisp on possible collaboration on the area of training, workshops, maintenance and supply of Zeiss high technology from light to 3D X-Ray Microscopes which can help to do automated quantitative CT mineral identification. Mr. Randall Crisp was accompanied by Mr. Nyanda Sweya, who is the marketing manager of Anudha Limited, a Tanzania based company that deals with the supply of surgical & and equipment.



A ceremony of handing over training certificate to Mr. Alberto Manuel from the National Mining Institute (Instituto Nacional de Minas) (INAMI) of Mozambique, the member state of the AMGC. Mr. Alberto Manuel finished participating in a training course on the Environmental Management in Mining from 27th November to 08th December 2023.



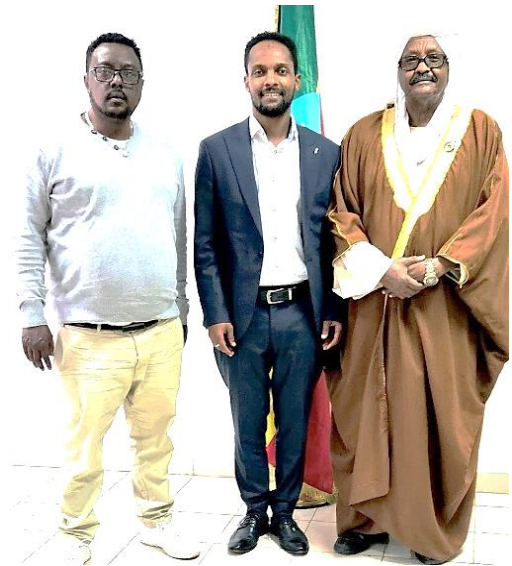
Tuesday 12th December 2023 is the date when Kenya obtained its independence from Great Britain in 1963. The Director General of the African Minerals and Geosciences



Centre (AMGC) was invited and attended the celebration by the Kenya High Commission, Dar es Salaam in Hyatt Regency Kilimanjaro Hotel, Dar es Salaam, Tanzania.



The African Minerals and Geosciences Centre (AMGC), an ISO 9001:2015 Certified participated in a three days sensitization training to supervisors on management and control of chemical substances and products (CSP) which was held at Mount Meru Hotel, Arusha in the United Republic of Tanzania from 6th to 8th December 2023. The training was organized by the Government Chemist Laboratory Authority (GCLA) which is an ISO 9001:2015 Certified. The GCLA is the supreme and referral laboratory in the country for safeguarding human health and environment. The training was officially adjourned by Dr. Fidelice Mbaruku Simbagungile Mafumiko, Chief Government Chemist. It should be noted that, Tanzania is among the founder members and the host for AMGC with a strong commitment in supporting the performance of the Centre. In this training AMGC was represented by Mr. Charles Buteta Athuman who is the Quality Manager and Manager of Chemical and Environmental Department. With this respect, AMGC is indebted to the management of the Government Chemist Laboratory Authority in the United Republic of Tanzania for extending an invitation to participate in this valuable training for the betterment of the Centre in the provision of the mineral services and products through the laboratory activities.



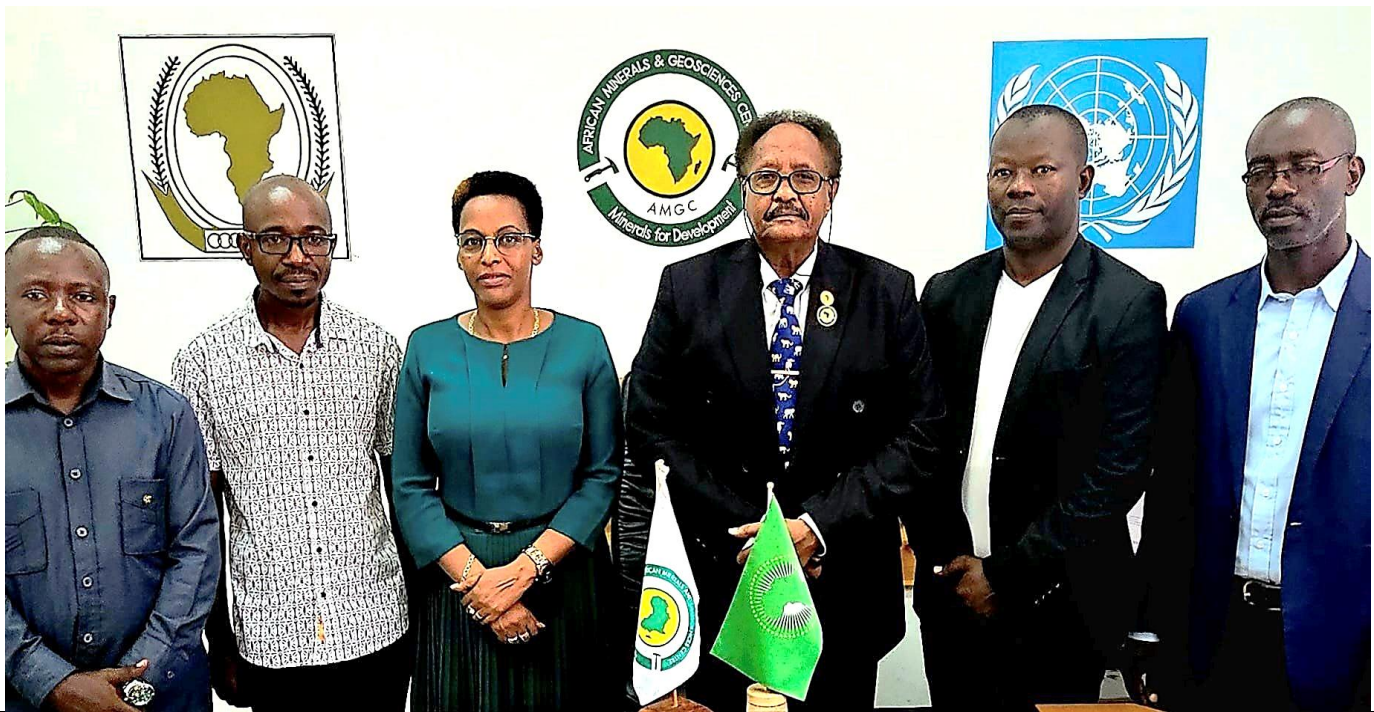
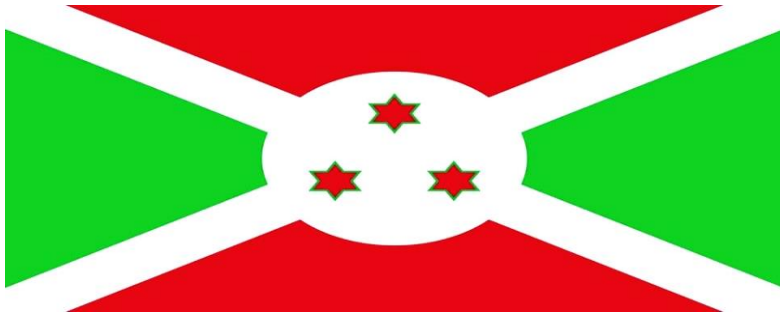
APPRECIATION AND CONGRATULATIONS

On behalf of the African Minerals and Geosciences Centre (AMGC) the Director General would like to thank and congratulate:

- Dr. Dejene Hailemariam for the leadership during his tenure General Director of the Geological Institute of Ethiopia (GIE) as well as Chairman of AMGC Board of Directors.
- Dr. Guta Legesse Tessem, for the leadership during his tenure General Director of Mineral Industry Development Institute (MIDI) of Ethiopia, as well as a member of AMGC Standing Committee of Officials (SCO). The AMGC is looking forward to continued working relationship with both as well as seeking their advice especially on mining issues.
- Mr. Ijara Tesfaye Erana for being assigned General Director of the Geological Institute of Ethiopia (GIE). Mr. Ijara Tesfaye is automatically the chairman of the Board of Directors of AMGC until the Policy Organ of the Centre decides to make a fresh election of the Chairmanship of the Board of Directors among its member states.
- Dr. Bisrat Kebede Negewo, for being assigned General Director of Mineral Industry Development Institute (MIDI) of Ethiopia. Dr. Bisrat is automatically a member of the AMGC Standing Committee of Officials (SCO) chaired by UNECA comprising Permanent Secretaries and/or Commissioners for Minerals/Mining in member states of AMGC.



Certificate handover ceremony for Mr. Helder Victorino Capitine Machaieie a professional from Instituto Nacional de Minas (INAMI), Maputo Mozambique who trained on a course of GIS and Remote Sensing Application to Geohazards from 12nd to 15th December 2023 under Geo-Information Department at AMGC in collaboration with a resource person Mr. Japhet Fungo, a Geologist (M.Sc. in Geology specializing in GIS and Remote Sensing). Mr. Japhet Fungo is the Tutorial Assistant at the Department of Geosciences under the School of Mines and Geosciences University of Dar es Salaam University, Tanzania. This course will help Mr. Helder Victorino Capitine Machaieie to apply the GIS and remote sensing techniques to suggest mitigation measures of the geohazards which might happen in his locality.



The African Minerals and Geosciences Centre (AMGC), on December 19th 2023 received a delegation of four professionals and heads of different laboratory departments from Burundian Office of Mines and Quarries (OBM) in Bujumbura. The professionals had a five days scientific visit to the Centre from 18th to 22nd December 2023 in order to identify the technical training priorities for capacity building to their laboratory staff. The professionals in the delegation are; -

- 1. Mrs. Nkurunziza, Beatrice, Director of Laboratory and head of delegation**
- 2. Mr. Bazikamwe, Deogratias, Head of Quality Management Unit**
- 3. Mr. Simbavimbere, Jean Paul, Head of Geochemical and Physicochemical Analysis**
- 4. Mr. Nshimirimana, Abel Desire, Head of Sample Preparation**



Certificate handover ceremony for Madam Diana Naburi, a businesswoman who had undertaking training courses at Department of Mineralogy, Petrology and Gemmology of the African Minerals & Geosciences Centre (AMGC). The first course was on Gemmology Basic Skills, which was conducted from 11-22 September 2023. Through this course, Madam Diana had been able to gained knowledge and practical skills on how to identify coloured stones and diamonds. The second course was on Advanced Gemmology Skills, which was conducted from 23th October to 03 November 2023. This course broadened more her knowledge and skills for gemstone identification, including the inclusions for imitations, synthetic (Lab grown), and composite stones.



Season's Greetings from the African Minerals and Geosciences Centre (AMGC) wishing to all Merry Christmas and Happy New Year 2024

New Courses




AMGC

New Courses

The Mineralogy, Petrology and Gemology Department is happy to announce the following new training courses

1

Gemstone/Mineral Estimation and Valuation

2

Jewellery Design

3

Gemstone Exploration & Gem Safari's

www.seamic.org

More Info
matokeo@seamic.org



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 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

Training Topics	Duration	Fee
Finance and Administration Department (FAD)		
Leadership and Management Skills	2 Weeks	\$1,500
Financial Management Skills	2 Weeks	\$1,500
Executive Secretarial Skills	2 Weeks	\$1,500
Chemical and Environmental Department (CED)		
Spectrometric Methods of Analysis.	2 Weeks	\$800
Analysis of Gold and Other Base Metals	2 Weeks	\$800
Modern Laboratory Management Method	2 Weeks	\$1,500
Quality Management Section (QM)		
Laboratory Certification and Accreditation	2 Weeks	\$1,500
Modern Laboratory Management Methods	2 Weeks	\$1,500
Quality Control and Quality Assurance in Laboratories	2 Weeks	\$1,500
Laboratory Safety and Security	2 Weeks	\$1,500
Mineralogy, Petrology and Gemology Department (MPGD)		
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 (IMAD)		
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 (MPSSMD)		
Practical Mineral Processing and The Basic Mineral Processing Flowsheet	2 Weeks	\$800
Sampling and Sample Preparation for Laboratory Testing	2 Weeks	\$800
Artisanal and Small-Scale Mining Activities	2 Weeks	\$800
Techniques of Gold Cyanidation	1 Week	\$800
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 (GID)		
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 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
Geochemical Exploration and Mapping	2 weeks	\$1,200
Structural Geology and Geotectonics in Mineral Exploration	2 weeks	\$1,200
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 Course	2 weeks	\$2,000
Prospect Evaluation: Volumetric and Risk Analysis	2 weeks	\$2,000



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***Minerals for
Development***

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MINERALOGY, PETROLOGY AND GEMMOLOGY SERVICES

The Mineralogy, Petrology and Gemmology Department utilizes the skills of its staff to address crucial issues in the mineral sector such as lack of technical knowledge on mineral testing and identification, evaluation, grading and value addition techniques.

EXPERTISE

- ✓ Mineralogical and petrological sample preparation and analysis
- ✓ Mineralogical evaluation of industrial minerals, ore minerals and clays
- ✓ Gemstone identification and grading
- ✓ Specialized training in Gemmology, Gemstone Cutting and Polishing and Mineralogical and Petrological Sample preparation and Analytical Techniques.



Petrography and Gemmological Microscopes

ANALYTICAL SERVICES

- ✓ Preparation of standard thin sections and polished sections
- ✓ Rock slabbing and polishing
- ✓ Rock core splitting
- ✓ Petrographic examination of thin sections and polished sections
- ✓ Evaluation of industrial minerals, ore minerals and clays
- ✓ Gemstone testing and identification
- ✓ Diamond grading
- ✓ Consultation and Expert opinion



Polishing Machine for Polished Mount Preparation

TRAINING SERVICES

- ✓ Mineralogical and petrological sample preparation and analytical techniques
- ✓ Gemstone Characterization, Identification and Value Addition
- ✓ Gemstone Identification Techniques
- ✓ Gemstone Value Addition Techniques (Gem Cutting)
- ✓ Gemstone Cabochon making and Carving
- ✓ Gemstone Faceting
- ✓ Gemstone Identification, Value Addition and Trading



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