



# AMGC News

## Director General's Message



During the month of April we run five training courses by the different departments. Two Remote sensing and GIS Applications for Mineral Exploration and Geological Mapping courses by Geo-information department for two groups of participants, Environmental Management of Mining course and Artisanal & Small-Scale Mining training course organized by Mineral Processing and Small-Scale Mining Department, as well as Gemstone Characterization and Identification Techniques course by Mineralogy Gemmology and Petrology Department. The Centre participated in the ICGLR Audit Committee meeting held in Bukoba, Tanzania. The Centre received three high level delegations from ICGLR, German Embassy, and Tanzanian Chamber of Mines (TCM) after the Director General of AMGC paid a courtesy visit to TCM.

## Contents

|   |         |
|---|---------|
| Training on GIS and Remote Sensing  | 1       |
| ICGLR Audit Committee Meeting   | 1       |
| Visit of the Deputy Executive Secretary of ICGLR  | 2       |
| DG Courtesy Visit to Tanzania Chamber of Mines  | 3       |
| Congratulation to Executive Secretary of TCM  | 4       |
| Visit of the Executive Secretary of Tanzania Chamber of Mines   | 4       |
| Trainings on GIS and Remote Sensing for Mineral Exploration and Geological Mapping & Environmental Management in Mining | 5       |
| Training on Artisanal and Small Scale Mining  | 6       |
| Training on Gemstones Characterization and Certification Techniques   | 6       |
| Visit of German Diplomats to AMGC   | 7       |
| AMGC Seasonal Greetings   | 8       |
| New Trainings   | 9 - 10  |
| Training List   | 11 – 12 |



## Training on GIS and Remote Sensing for Mineral Exploration and Geological Mapping



Certificate hand out ceremony for Mr. Oltesh Martin Thobias, a self-employed Tanzanian for a one week training course on GIS and Remote Sensing for Mineral Exploration and Geological Mapping, which conducted from 28 March to 01 April 2022 by Geo-information Department of the African Minerals and Geosciences Centre (AMGC).

## 20<sup>th</sup> meeting of the ICGLR Audit Committee



The 20<sup>th</sup> meeting of the ICGLR Audit Committee held in Bukoba, Tanzania. The Government of the United Republic of Tanzania officiated the meeting by Hon. Dr. Doto Biteko, the Minister of Minerals. The ICGLR delegation was headed by H.E. the Sudanese Ambassador Yasir Ibrahim Ali Mohammed, the Deputy Executive Secretary of ICGLR. The African Minerals and Geosciences Centre (AMGC) was represented by Mr. Charles Buteta, the Quality Manager/Ag. Manager of Chemical and Environmental Department.



## Familiarization Visit of the Deputy Executive Secretary of ICGLR



H.E. Yasir Ibrahim Ali Mohammed, the Deputy Executive Secretary of the International Conference on the Great Lakes Region (ICGLR) paid a familiarization visit to the African Minerals and Geosciences Centre (AMGC) and the Analytical Finger Printing (AFP) Laboratory hosted by the Centre on 6<sup>th</sup> April 2022. The AFP lab is established to analyze mining sites of conflict minerals from the African Great Lake Region. It is hosted by AMGC under a tripartite cooperation between AMGC, ICGLR & Federal Institute of Geosciences and Natural Resources (BGR) and funded by the German Government in support to the Regional Initiative against the illegal exploitation of Natural Resources (RINR) of the ICGLR. The AFP laboratory was officially inaugurated on 08<sup>th</sup> June 2018 by Hon. Kassim Majaliwa (MP), the Prime Minister of the United Republic of Tanzania. The inaugural went parallel with the 38<sup>th</sup> AMGC Governing Council Meetings in Dar es Salaam on 07<sup>th</sup> August 2018.

The ICGLR delegation led by the Dr. Emmanuel Mali Makumba, the Director, Democracy and Good Governance accompanied by Mr. Gerard Nayuburundi and Mrs. Arthemie Ndikumana had visited the AMGC on February 25, 2022 as well as held a meeting with the AMGC and BGR, Germany as the development partner. The meeting discussed various issues on AFP Lab including management and technical aspects along with commercialization of the laboratory for sustainability. A second tripartite meeting was held virtually between AMGC, ICGLR and BGR, discussing various issues on AFP Lab including management and technical aspects along with commercialization of the laboratory for sustainability. AMGC is committed to continue with a smooth working relationship under the framework of the tripartite cooperation between AMGC, BGR and ICGLR as it is stipulated in the Agreement on running the AFP Lab hosted by AMGC in Dar es Salaam, Tanzania.

Recently Mr. Manuel Wollschläger, the Manager of AFP Project in the ICGLR is replaced by Mr. Wilhelm Schink. Mr. Ibrahim Shaddad, the Director General of AMGC thanked Mr. Wollschläger for the fruitful cooperation and welcomed Mr. Schink's nomination.

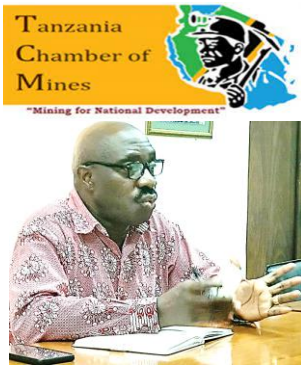
## DG Courtesy Visit to Tanzania Chamber of Mines



The African Minerals and Geosciences Centre (AMGC) is enhancing its working relationship with the Tanzania Chamber of Mines (TCM). AMGC and TCM are long time partners in the development of the mineral resources of Tanzania for the sector's appropriate benefit to the economy of Tanzania and will continue to strengthen this partnership between the two parties. In this regard Mr.

Ibrahim Shaddad, the Director General of AMGC paid a courtesy visit to TCM. The visit was important in harnessing AMGC-TCM cooperation for the success of the mining industry in Tanzania. TCM was established in November 1994 and represents the private participants in the Tanzanian mineral sector. The membership of TCM is close to 50, including a broad spectrum of key players in the mining industry drawn from the largest international mining companies in the world, medium scale miners, junior explorers and service providers including AMGC, who have identified Tanzania as a worthwhile mining investment destination. TCM acts as a voice for the Mining industry and plays a pivotal role within the sector as a mediator between the mining investment community and key stakeholders, most notably the Government of Tanzania and the public with an aim in partnership to address the country's specific challenges in the mining industry.

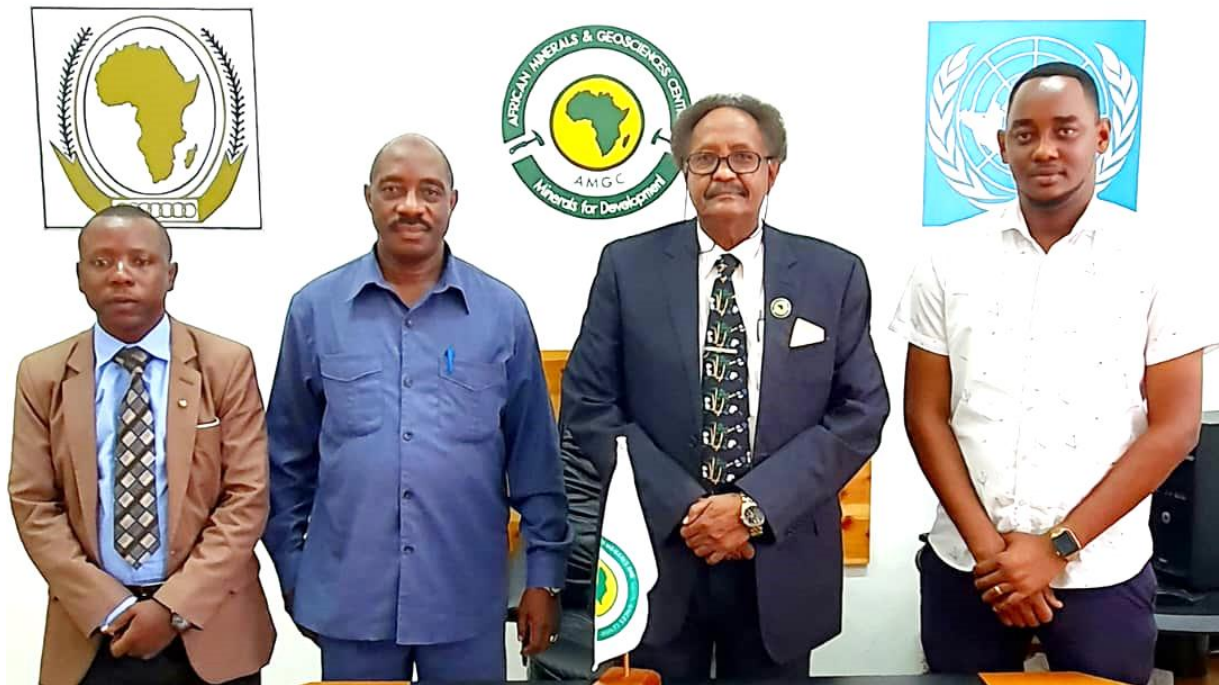
Eng. Benjamin Mchwampaka, the former Commissioner for Minerals at the Ministry of Energy and Minerals of Tanzania is the Executive Secretary of TCM. The Director General of AMGC took the opportunity to invite the Executive Secretary to pay a familiarization visit to AMGC to know the activities being carried out and the recent development in analytical instruments acquired by AMGC to serve the mining sector and geoscience community in Tanzania, member states and other African Countries. AMGC being one of the experienced stakeholders in the mining sector, ensures to cooperate with TCM and work closely with each other on how to operate smoothly in mining sector.



## CONGRATULATIONS

The Management of African Minerals and Geosciences Centre (AMGC) congratulates Eng. Benjamin Mchwampaka, the former Commissioner for Minerals at the Ministry of Energy and Minerals (MEM) of Tanzania for being selected the Executive Secretary of Tanzania Chamber of Mines (TCM). We believe the selection of Eng. Benjamin will inject new blood for a prosperous chamber in 2022 and beyond.

### Familiarization Visit of the Executive Secretary of Tanzania Chamber of Mines (TCM)

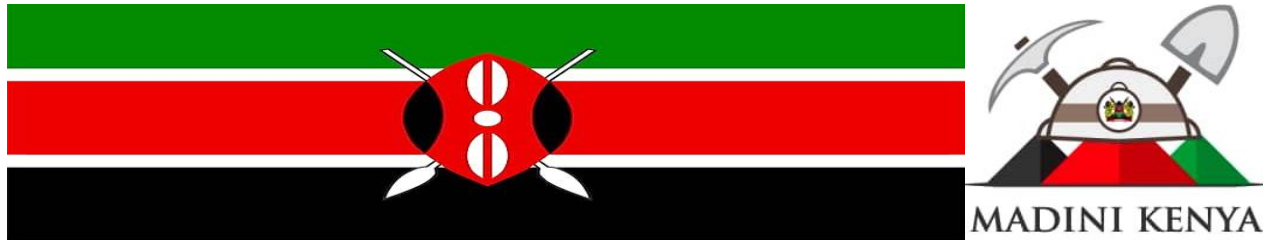


Eng. Benjamin Mchwampaka, the Executive Secretary of Tanzania Chamber of Mines (TCM) accompanied by his assistant Mr. Majani Moremi paid a familiarization visit to the Centre. Eng. Benjamin and Mr. Majani toured all the five technical departments and Analytical Finger Printing Laboratory hosted at the Centre. He commended the mineral services being provided by the Centre as well as recent development in enhancing its analytical infrastructures.

AMGC as a regional minerals service provider is a member of the TCM and the Centre is striving to be in the service of the key players in the Tanzania mining industry from the largest international mining companies, medium scale miners and artisanal small scale miners (ASM). The Centre offers its Africa Mining Vision Hall for hosting the Chamber of Mines functions and meetings, and also AMGC through its Industrial Minerals Application Department (IMAD) is ready to carry out production of ceramic/pottery ware for the Chamber of Mines and its members, in addition of provision of clay day workshops for children and families of the Chamber community in Dar es Salaam.



## Trainings on GIS and Remote Sensing for Mineral Exploration and Geological Mapping & Environmental Management in Mining



**Certificate hand out ceremony for the first group comprising five Kenyan trainees from the Kenyan Ministry of Petroleum and Mining. The Kenyan officers participated in training programmes during 4<sup>th</sup> – 15<sup>th</sup> April 2022. GIS and Remote Sensing for mineral exploration and geological mapping was attended by the following four geologists:- Mr. John Mutuku Waita, Senior Principal Superintending Geologist, Mr. Martin Odhiambo Nyakinye, Chief Superintending Geologist, Mr. Mumia Titus Lutta, Senior Superintending Geologist, Mr. James Kimani Kirembu, Senior Superintending Geologist and Mr. Raymond Mutiso, Director Mines attended Environmental Management in Mining Course.**

## Training on Artisanal and Small Scale Mining



**Welcoming Eng. Gregory Kituku , who arrived on Sunday 17<sup>th</sup> April 2022 from the Kenyan Ministry of Petroleum and Mining to attend a training programme on Artisanal and Small Scale Mining during 19 April- 29th April 2022.**

## Training on Gemstones Characterization and Certification Techniques



**Certificate hand out ceremony for a Tanzanian who is Mr. Oltesh Martin Thobias, a self-employed person on a practical course of Gemstones Characterization and Certification Techniques during 11-22 April 2022.**





On 22<sup>nd</sup> April 2022, the African Minerals & Geosciences Centre (AMGC) was honored by a courtesy visit of two German diplomats from the Embassy of the Federal Republic of Germany in Dar es Salaam; Tanzania who are Dr. Kathrin Steinbrenner, Deputy Head of Mission and Dr. Katrin Bornemann, Head of Development Cooperation. The two German diplomats familiarize themselves with the spectrum of mineral services provided by the Centre including the services of the Analytical Finger Printing (AFP) Laboratory for analysis of conflict Minerals in the African Great Lakes Region. It is worth mentioning that H.E. Mrs. Regine Hess, the German Ambassador to Tanzania paid a similar familiarization visit to AMGC on 5<sup>th</sup> February 2020.



## AMGC Seasonal Greetings



رمضان كريم ويحبه كل كريم

**Ramadan Kareem**



May this Easter bring  
peace and  
contentment in every  
ones life.

**Happy Easter**



Happy Fasika /መልከም ፋሲካ /  
Melkam Fasika  
(Orthodox Easter)  
to Ethiopians & Eritreans  
**May your Easter be  
filled with joy,  
happiness, peace and  
prosperity**



**Eid Al Fitr Mubarak**

كل عام وأنتم بخير وتقبل  
الله طاعتكم في رمضان  
الكريم



## 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 softwares. 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     |
|---|----------|---------|
| <b>Finance and Administration Services</b>                                  |          |         |
| Leadership and Management Skills Training Course                            | 2 Weeks  | \$800   |
| Financial Management Skills Training Course                                 | 2 Weeks  | \$800   |
| Executive Secretarial Training Course                                       | 2 Weeks  | \$800   |
| <b>Chemical and Environmental Services</b>                                  |          |         |
| Spectrometric Methods of Analysis.  | 2 Weeks  | \$800   |
| Analysis of Gold and Other Base Metals                                      | 2 Weeks  | \$800   |
| <b>Quality Management</b>   |          |         |
| 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 |
| <b>Mineralogy, Petrology and Gemmology Services</b>                         |          |         |
| 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   |
| <b>Industrial Minerals Application Services</b>                             |          |         |
| 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   |



| <b>Mineral Processing and Small-scale Mining Services</b>   |            |         |
|---|------------|---------|
| 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   |
| <b>Geo-information Services</b>   |            |         |
| 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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## INDUSTRIAL MINERALS APPLICATION SERVICES

The main function of the Industrial Minerals application Department is to carry out Research & Development in product development and evaluation of the industrial minerals potential of the member states of AMGC as well as to assess their applicability mainly in ceramic and related fields.

### TRAINING

The Department conducts, practical courses with basic lessons in clay technology, pottery and ceramics.

The courses are designed for women and men interested in acquiring the basic know-how and skills in ceramics and pottery technology and its allied products.



Participants from Jamaica on Ceramic and pottery training



Forming by throwing

### PRODUCTION OF TABLE WARES



Finishing of products



Forming by slip casting



Artist decorating wares

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