



6th

**UMaT Biennial International
Mining and Mineral Conference**

**5th - 6th
August, 2020**

**Theme: "Expanding the Frontiers of
Mining Technology"**

PROGRAMME OF ACTIVITIES

Metso:Outotec



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GHANA

BRIEF PROFILE OF KEYNOTE SPEAKER

ANTHONY (TONI) AUBYNN



Dr Anthony Aubynn is a distinguished Ghanaian with a rich career in the extractive industries, having worked in both the mining and oil and gas sectors. He is the Founder and President of the Africa Institute of Extractives Industry (AIEI), an extractive industries Think-tank, which focuses on regulations, policies, governance and inclusiveness. He is also a Consultant on a wide range of issues in the extractives industry including, Sustainable and Inclusive extractives; Review and Restructuring of national mining regulatory frameworks; Local Content, CSR and Social Return on Investments as well as Country entry of extractive business.

Dr Aubynn is the immediate past Chief Executive Officer of the Minerals Commission of Ghana. He began his career in the mining industry as the first Human Resources (and Local Affairs Manager) and the first Ghanaian Manager of Abosso Goldfields Limited (AGL). On the acquisition of AGL by Gold Fields Limited, Toni was elevated to the Ghana Office in Accra and became the first Head of Corporate Affairs and Sustainability. After serving AGL and Gold Fields for nearly 13 years, Toni moved to join Tullow Ghana Limited as the Director of Corporate Affairs. He was later appointed the Chief Executive Officer of the Ghana Chamber of Mines.

At the Minerals Commission, Dr Aubynn is credited with the completion of Ghana's first comprehensive Mining and Minerals Policy document. He initiated the Ghana Mining Vision as well as the digitization of the country's minerals cadaster system. He established the first 'Gender Desk' at the Minerals Commission. The maiden national gold assay Laboratory was also established during his term and led the development of a comprehensive policy proposal for the effective regulation and management of the Ghana's Small-scale mining sector.

At international level, Dr. Aubynn has been involved in a number of initiatives that have sought to improve the understanding of the relationship between mining and local communities, and also sought improvements in the Artisanal and Small Scale Mining sector. These initiatives have seen him serve as Chair of International Council of Minerals and Metals' (ICMM) Artisanal and Small-Scale Mining (ASM) Working Group, as well as the Association and Commodities Group (AGC) and a long-time member of the Strategic Management Advisory Group of the World Bank and DFID sponsored Community and Artisanal Small-scale Mining (CASM).

**PROGRAMME FOR THE 6TH UMaT BIENNIAL INTERNATIONAL
MINING AND MINERAL CONFERENCE
5th – 6th August, 2020**

Date	Time	Activity	Venue/Persons
5 th August	9.00 - 9.02	Opening Prayer	Virtual Room 1 ZOOM ID: 649 0342 4383
	9.02 - 9.10	Welcome Address	Prof J. S. Y. Kuma Vice Chancellor, UMaT Virtual Room 1 ZOOM ID: 649 0342 4383
	9.10 - 9.50 9.50 - 10.00	Fraternal Greetings/ Presentation by Sponsors	Virtual Room 1 Metso Outotec
			Ghana Chamber of Mines ZOOM ID: 649 0342 4383
	10.00 - 11.00	Keynote Address	Dr Toni Aubynn Founder and President, Africa Institute of Extractive Industries. Virtual Room 1 ZOOM ID: 649 0342 4383
	11.00 - 13.00	Technical Presentations	Virtual Rooms 1, 2, 3, 4
	13.00 - 13.40	Break	
13.40 - 16.00	Technical Presentations	Virtual Rooms 1, 2, 3, 4	
6 th August	9.00 - 12.40	Technical Presentations	Virtual Rooms 1, 2, 3, 4
	12.40 – 12.50	Closing Ceremony	Virtual Room 1 ZOOM ID: 649 0342 4383

5th August, 2020

GEOMATIC AND GEOLOGICAL ENGINEERING

Chair - Prof F. T. Suorineni /Assoc Prof (Mrs) C. B. Boye

Meeting ID: 649 0342 4383

Room	Time	Author(s)	Paper Title
Virtual Room 1	11.00 - 11.20	A. Owolabi	Geospatial Assessment of Mine Sites in Plateau State, Nigeria
	11.20 - 11.40	E. A. A. Kwesi, K. N. Asamoah, A. K. Mends and L. C. Hlorvor	Identification of Permissible Land-Fill Sites at the District Level: A Case Study in Tarkwa-Nsuaem Municipality of Ghana
	11.40 - 12.00	E. A. A. Kwesi, C. Assencher, L.C. M. Kwofie and A. K. Mends	Supporting Waste Management and Sanitation at the District Level through Surveying and Mapping: Case Study in the Prestea-Huni Valley Municipality of Ghana
	12.00 - 12.20	E. A. A. Kwesi and K. N. Asamoah	Mapping of Ground Water Vulnerability for Landfill Site Selection Assessment at the District Level — Case Study in the Prestea-Huni Valley Municipality of Ghana
	12.20 - 12.40	S. Mantey and E. K. Otoo	Assessing the Impact of Illegal Mining in the Apamprama Forest Reserve of Ghana using Unmanned Aerial Vehicle (UAV)
	12.40 - 13.00	B. Adebayo and V. A. Babatuyi	Determination of Drill-Cuttings Size Distribution and Rock Properties for Mechanical Breakage Performance Analysis
BREAK			

5th August, 2020

GEOMATIC AND GEOLOGICAL ENGINEERING

Chair – Prof F. T. Suorineni /Assoc Prof (Mrs) C. B. Boye

Meeting ID: 649 0342 4383

Room	Time	Author(s)	Paper Title
Virtual Room 1	13.40 - 14.00	J. S. Y. Kuma, M. Affam and E. N. Asare	Product Marking and Conformity Assessment of Portland Cements on the Ghanaian Market
	14.00 - 14.20	L. K. Salati and J. T. Adeyemo	Feasibility Study on the Suitability of Granite Outcrops for a Proposed Quarrying Operation at Kpoyipma Community, Kaduna, North-Western Nigeria
	14.20 - 14.40	G. Owusu-Bempah and E. Villaescusa	Streamlining Geotechnical Slope Reconciliation for Open Pits: a Slope Optimization and Recommendation Approach at Brockman 2 Operations in the Pilbara Region, Australia
	14.40 - 15.00	K. N. Asamoah, S. Al-Hassan and E. B. Fiadonu	Economic Evaluation of the Kottraverchy Pit Deposit of Gold Fields Ghana Limited, Tarkwa Mine

5th August, 2020

INNOVATION IN MINING AND PETROLEUM TECHNOLOGY

Chair - Assoc Prof E. Ben-Awuah/Dr E. Broni-Bediako

Meeting ID: 636 9922 6659

Room	Time	Author(s)	Paper Title
Virtual Room 2	11.00 - 11.20	O. Mbadozie and E. Ben-Awuah	Incorporating Grade Uncertainty in Oil Sands Mine Planning and Waste Management Optimisation Using Stochastic Mathematical Programming
	11.20 - 11.40	E. Apraku and V. A. Temeng	Improving Shovel-Truck Productivity through Operational Efficiencies at Gold Fields Ghana Limited, Tarkwa Mine
	11.40 - 12.00	E. T. Brantson, I. C. Madubuike, N. I. Fuseini, M. E. Domeh and A. A. Amoah	Analytical and Numerical Modelling of Water Influx in Bottom Water Reservoir
	12.00 - 12.20	B. Takyi, A. Selegah, U. J. Godwin and K. E. Kouadio	Reservoir Compartmentalisation Studies of the "X" Field of the Niger Delta, Nigeria
	12.20 - 12.40	E. T. Brantson, H. Osei, A. A. Amoah and N. I. Fuseini	Numerical Simulation of Low Salinity Water Flooding in Carbonate Reservoirs
	12.40 - 13.00	S. Adjei Marfo and C. Kporxah	Predicting Oil Production Rate using Artificial Neural Network and Decline Curve Analytical Methods

5th August, 2020

INNOVATION IN MINING AND PETROLEUM TECHNOLOGY

Chair – Assoc Prof E. Ben-Awuah/Dr E. Broni-Bediako

Meeting ID: 636 9922 6659

Room	Time	Author(s)	Paper Title
Virtual Room 2	13.40 - 14.00	R. Amarin, E. Broni-Bediako and P. Sasu	The Effects of Spent Synthetic Based-Mud on Terrestrial and Aquatic Lives
	14.00 - 14.20	E. T. Brantson, H. Osei, J. Essuman, N. I. Fuseini and T. F. Appiah	Hybridization of Low Salinity Water Assisted Foam Flooding in Carbonate Reservoir for Enhanced Oil Recovery
	14.20 - 14.40	E. P. Amenyah Kove, W. K. Buah and O. K. Dankwa	Heavy Metal Distribution in Contaminated Oil – Based Mud from a Selected Oilfield in Ghana
	14.40 - 15.00	J. Villeneuve, E. Ben-Awuah, and P. Vasquez-Coronado.	Hierarchical Mine Planning for a Semi-Mobile In-Pit Crushing and Conveying (IPCC) System Using Discrete-Event Simulation

5th August, 2020

ADVANCES IN MINERALS EXTRACTION

Chair - Dr C. K. Owusu/Assoc Prof J. R. Dankwah

Meeting ID: 660 1943 0071

Room	Time	Author(s)	Paper Title
Virtual Room 3	11.00 - 11.20	R. K. Amankwah and R. S. Suglo	Sustaining the Minerals Industry of Ghana – A Challenge to Stakeholders
	11.20 - 11.40	R. Amorin, E. A. Agorhom and F. K. Mensah	Evaluation the Effectiveness of Combined Dissolved Air Flotation (DAF), Filtration and Activated Carbon Adsorption Processes in the Treatment of Oily Wastewater from Drilling Activities
	11.40 - 12.00	A. Benson, P. C. O. Adu, S. B. Woeko and G. Ofori-Sarpong	Effects of Entrained Biomass of Phanerochaete Chrysosporium on Carbon-In-Leach Operations
	12.00 - 12.20	F. K. Darteh, A. Mamudu, A. Boateng and G. Ofori-Sarpong	Predicting the Extent of Preg-robbing based on the Maturity of Carbonaceous Gold Ores
	12.20 - 12.40	A. Intarmah, D. Amankwah, G. Ofori-Sarpong and R. K. Amankwah	Carbon Re-Adsorption of Gold from Eluate as an Alternative to Gold Electrowinning
	12.40 - 13.00	E. P. Kusi, V. Anni, G. Ofori-Sarpong and R. K. Amankwah	Bioremediation of Nitrates from Selected Water Bodies within the Tarkwa Nsuaem Municipality
	BREAK		

5th August, 2020

ADVANCES IN MINERALS EXTRACTION

Chair - Dr C. K. Owusu/Assoc Prof J. R. Dankwah

Meeting ID: 660 1943 0071

Room	Time	Author(s)	Paper Title
Virtual Room 3	13.40 - 14.00	K. B. Owusu, J. Karageorgos, C. Greet, M. Zanin, W. Skinner and R. K. Asamoah	Acoustic Monitoring of Mill Pulp Densities
	14.00 - 14.20	K. B. Owusu, J. Karageorgos, C. Greet, M. Zanin, W. Skinner and R. K. Asamoah	Variations in Mill Feed Characteristics and Acoustic Emissions
	14.20 - 14.40	A. K. Saim, R. Ntiri-Bekoh, H. Orleans-Boham and R. K. Amankwah	Gold Phytoextraction by <i>Alocasia macrorrhizos</i> (Giant Taro): Implications in Phytomining
	14.40 - 15.00	P. Forson, M. Zanin, W. Skinner and R. Asamoah	Effect of Collector Type and Blends on Mixed Pyrite and Arsenopyrite Flotation
	15.00 - 15.20	L. D. Ayedzi, P. Forson and G. Abaka-Wood	Decoupling the Effects of Pulp Potential and pH on the Flotation of Pyrite
	15.20 - 15.40	G. B. Abaka-Wood, J. Addai-Mensah and W. Skinner	Characterisation of Mining Tailings for the Beneficiation of Rare Earth Elements Minerals
	15.40 - 16.00	P. Forson, M. Zanin, W. Skinner and R. Asamoah	A Brief Review of Auriferous Sulphide Flotation Concentration; Pyrite and Arsenopyrite Mineral Separation

5th August, 2020

ENVIRONMENT, SAFETY, CORPORATE SOCIAL RESPONSIBILITY, SMALL SCALE MINING, AND OTHERS

Chair - Dr K. Kamasa/Dr E. Stemm

Meeting ID: 620 6090 6733

Room	Time	Author(s)	Paper Title
Virtual Room 4	11.00 - 11.20	J. Obiri-Yeboah and F. O. Somoah	Preliminary inspection for Improvement of Process Plant Operation and Management: Case study of Akroma Gold Company, Nkwakaw
	11.20 - 11.40	J. A. Abane, M. Abubakari, A. A. Affum and E. K. Mills-Abbey	Assessing the Readiness of Developing Countries in Achieving SDG Targets on Sanitation: Exploring the Factors that Influence Waste Management Practices in Ghana
	11.40 - 12.00	C. Addei and E. Kokroko	The Effect of Social Media Use on the Written English of University Students: The Case of University of Mines and Technology (UMaT)
	12.00 - 12.20	H. Osumanu and F. Boateng	The Relationship between Leadership and Innovation in Organisational Performance: A Case of Tarkwa Nsuaem Municipal
	12.20 - 12.40	B. A. E. Boafo, B. Koomson and O. F. Agyemang	Environmental Impacts of Illegal Small-scale Mining Activities on the Aboabo Stream, Ahafo Region, Ghana
	12.40 - 13.00	P. O. Amoh, S. Fosu and W.K. Buah	Characterisation of Kitchen Solid Waste at Senior High Schools in Tarkwa
	13.40 - 14.00	L. K. Salati, and J. T. Adeyemo	Mining and African Environment: Bridging the Gap between Legislation, Enforcement and Compliance
	14.00 - 14.20	A. O. Clement	Operational Risk Assessment and Management in Dangote Cement Company Ibese Plant, Ogun State
	14.20 - 14.40	J. K. Dumenyah and E. Kokroko	Assessment of Attitudes of Engineering students at UMaT vis-à-vis the Study of Basic French

6th August, 2020			
GEOMATIC AND GEOLOGICAL ENGINEERING			
Chair - Assoc Prof M. Affam			
Meeting ID: 649 0342 4383			
Room	Time	Author(s)	Paper Title
Virtual Room 1	9.00 - 9.20	A. Asante-Annor, E. Ansah and K. Acherefi	Preliminary Flood Vulnerability and Risk Mapping of Koforidua and its Environs using Integrated Multi-Parametric AHP and GIS
	9.20 - 9.40	O. B. Akindele, B. M. Olaleye, and I. A. Okewale	Probabilistic Analysis of Potential Slope Failure in a Typical Surface Coal Mine in Nigeria
	9.40 - 10.00	K. P. Osei, C. Kusi-Manu and D. T. Kwabong	Multivariate Statistical Evaluation of Geochemical Data at Badukrom Gold Mineralisation Project

6th August, 2020			
INNOVATION IN MINING AND PETROLEUM TECHNOLOGY			
Chair - Dr R. Amorin			
Meeting ID: 649 0342 4383			
Room	Time	Author(s)	Paper Title
Virtual Room 1	10.05 - 10.25	S. Adjei Marfo, P. O. Appau, C. Morkli and S. Issah	Natural Gas Dehydration Process Simulation and Optimisation - A Case Study of Jubilee Field
	10.25 - 10.45	H. A. Erebebe	Mining-Caused Unfriendly Ecological Effects in Nigeria
	10.45 - 11.05	C. V Edeh	Economic Need for Reviving Coal Mining Industry in Nigeria

6th August, 2020

ADVANCES IN MINERALS EXTRACTION

Chair - Dr E. Agorhom/ Dr R. K. Asamoah

Meeting ID: 636 9922 6659

Room	Time	Author(s)	Paper Title
Virtual Room 2	9.00 - 9.20	J. Obiri-Yeboah, F. Larbi, K. Adjei and P. N. Sarpong	Performance Assessment of cycled carbon at gold Processing Plant: A Case Study Jopaf Goldfields Limited, Nkawkaw, Ghana
	9.20 - 9.40	A. Amesimeku, L. Ayedzi and R. K. Amankwah	Phyto Production of Manganese Nanoparticles using Stubborn Grass (<i>Eleusine indica</i>) - A Preliminary Study
	9.40 - 10.00	C. K. Kuutor, S. Kwofie and R. K. Amankwah	Quality Assessment of Steel Balls for Improved Grinding Circuit Performance and Expenditure
	10.00 - 10.20	C. Amoah, G. Ofori-Sarpong and R. K. Amankwah	Reducing Uncertainties in the Grindability of Rocks in Gold Plant Design and Operations
	10.20 - 10.40	J. R Dankwah, A. Amponsah, P. C. O Adu, J. Dankwah and	Pyrometallurgical Recovery of Aluminium Metal from End-of-Life Beverage Cans
	10.40 - 11.00	B. Koomson, W. Cudjoe and R. Nkrumah	Ascertaining the Potential of Lead Mobilisation into the Geo-Environment by Spent Fire Assay Crucibles
	11.00 - 11.20	M. Abdul-Wasiu, F. K. Darteh, E. Tawiah and G. Ofori-Sarpong	Detoxification of Cyanide Wastewater using Sawdust and Charcoal Pieces
	11.20 - 11.40	N. Ofosuhene and G. B. Abaka-Wood	A Study of the Relative Impact of Particle Size Distribution on Gold Recovery
	11.40 - 12.00	B. Amankwaa-Kyeremeh, C. Greet, M. Zanin, W. Skinner and R. K. Asamoah	Predictability of Rougher Flotation Copper Recovery using Gaussian Process Regression Algorithm
	12.20 - 12.40	B. N. P. Asante, K. O. Nimako, K. Mensah, P. Koshy and J. R. Dankwah	Calcination Behaviour of Nsuta Pyrolusite Ore in the Presence and Absence of End-of-Life Polystyrene

6 th August, 2020			
INNOVATIONS IN MECHANICAL, ELECTRICAL, MATHEMATICAL AND COMPUTER SCIENCES			
Chair – Prof Ebenezer A. Jackson/ Assoc Prof C. K. Amuzuvi			
Meeting ID: 620 6090 6733			
Room	Time	Author(s)	Paper Title
Virtual Room 4	9.00 - 9.20	M. O. Oyeleye and T. D. Makanju	Electrical Lighting Load Estimation Prior to Design
	9.20 - 9.40	S. Ohene Adu, S. Nunoo and J. R. Dankwah	Evaluation of Local Backfill Materials on Earthing Systems
	9.40 - 10.00	K. Koranteng, J. Kornu, W. Gedel, E. Mensah and I. Aidoo	Design and Development of an Egg Collecting and Sorting System equipped with an HMI for Poultry Farms
	10.20 - 10.40	E. Yin, E. Quaicoe and E. K. Asiedu	Design of a Combined Gravity Concentration and Leaching Plant for the Small-scale Gold Mining Industry in Ghana
	10.40 - 11.00	E. Yin	Conveyor Chain Links – A Review
	11.00-11.20	C. C. Nyarko, P. K. Nyarko and A. Buabeng	Time Series Analysis of Tuberculosis Cases in Mining Communities in Ghana – A Case Study at Tarkwa Nsuaem Municipality
	11.20 - 11.40	A. Buabeng, H. Otoo and E. Mensah	Comparative Analysis of ARIMA, ANFIS and GMDH Models using Standard Precipitation Index (SPI) for Flood Prediction: A Case Study Accra, Ghana
	11.40 - 12.00	A. Buabeng and F. Obiri-Yeboah	Effects of Climate Change on Maize Production in Ghana - A Comparative Study of Parametric and Non-Parametric Regression Models
	12.00 - 12.20	S. Asare and S. Akpah	Biomate: Exploring the Impact of an Augmented Reality (AR) Application for Senior High School Anatomy Studies
12.20 - 12.40	K. Eddah, O. A. Dahunsi, A. Simons and S. Nunoo	Vibration Analysis of a 4-DOF Quarter Truck Model	