Anthony Morgan

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Research Interest

Keen research interest in Oil and gas related issues; Enhance Oil Recovery Techniques, Drilling fluid formulation, Reservoir Characterization, Application of Artificial Intelligent in petroleum engineering and production optimization processes.

Education

PhD. Petroleum Engineering	New Mexico Tech – USA	Jan. 2020 to Date
M.Sc. Petroleum Engineering	University of Aberdeen – Scotland, UK	Sep.2016- Sep.2017
B.Sc. Petroleum Engineering	Kwame Nkrumah Uni. of Sci. & Tech - Ghana	Aug.2010-May 2014
General Science	St. Peters Senior High – Ghana	Sep.2006-June 2009

Short Courses

- Understanding Rig Inspection   (Aberdeen Drilling Consultants- UK)   Jan. 2017
- Time series analysis; application in reflection seismology   Nov. 2014
  (Tullow oil and University college Dublin, UK)
- Single Diploma in Business Administration and Marketing   June 2013
  (London Centre of Management -UK)

Publications/

- **Morgan, A.,** Akanji, L., Udoh, T., Mohammed, S., Aggrey Nkrumah, W., & Sarkodie-Kyeremeh, J. (2020, August 11). Experimental Determination of Protein Enzyme Bio-Surfactant Properties for Enhanced Oil Recovery. Society of Petroleum Engineers. doi:10.2118/203599-MS
- **Morgan, A.,** Akanji, L., Udoh, T., Mohammed, S., Anumah, P., & Kyeremeh, S. J. (2020, August 11). Fractional Flow Behaviour and Transport Mechanisms During Low salinity and Protein Enzyme Bio-surfactant EOR Flooding. Society of Petroleum Engineers. doi:10.2118/203600-MS
- Mohammed, S., **Morgan, A.** & Nyantakyi, E. On the influence of uncited publications on a researcher's *h*-index. *Scientometrics* **122,** 1791–1799 (2020). https://doi.org/10.1007/s11192-020-03356-1
- Mohammed, S., Anumah, P., Sarkodie, J., **Morgan, A.,** & Acheaw, E., Analysis of Boundary-Dominated Gas Well Production Data. Society of Petroleum Engineers. Doi: 10.2118/198732-MS, August 5, 2019
- Anumah, P., Mohammed, S., Sarkodie, J., Aggrey, W. N., **Morgan, A.,** Petrophysical Evaluation of the Reservoir in the K-Field, Offshore Ghana., Society of Petroleum Engineers. Doi 10.2118/198796-MS, August 5, 2019
- Aggrey, W.N., **Morgan, A.**, Prempeh, K.O., and Anumah, P.,. Thermodynamic modelling of the effects of high temperatures on brine fluid density. Journal of Petroleum Engineering & Technology, 9(1), pp.26-35. 2019
- Godwill A. P., **Morgan A.**, Jamel A.,'' Design of LPG pressure vessel, a case study of Aboabo in the Southern part of Ghana-West Africa'', International Journal of Scientific and Engineering Research ISSN (Online); 2229-5518, Volume 8, Issue 1, January-2017.
- Tandoh K. K., **Morgan A.**, Seckley A. W., Brako B. A., ''Geochemical Characteristics of the Basin-type Gratinoids in the Atia andits surrounding areas of the 'Kumasi-basin' of Ghana'', International Journal of Scientific & Engineering Research, ISSN (Online) 2229-5518, Volume 7, Issue 12, December-2016.

- Afari, S.A, Sarkodie K., Aggrey W.N., **Morgan A.**, "Assessment of Petroleum Reservoir Recovery Factor using Complexity Scoring and Artificial neural network", International Journal of Scientific and Engineering Research ISSN (Online):2347-3878, Volume 3 Issue 7, July 2015.

Dissertation/Projects

Combined Low Salinity and Bio-surfactant Enhanced Oil Recovery

(MSc. Dissertation – Supervised by Prof. Lateef Akanji, Aberdeen - UK)

- o To investigate the mechanisms such as adsorption, adhesion, interfacial tension, wettability alteration and ionic exchange during the displacement processes.
- o to investigate the effect of double layer which could influence the kinetics of wettability of sandstone reservoirs
- o To understand the influence of fractional flow behaviour and transport mechanisms in deriving the intervention phase of low saline water injection combined with bio-surfactant enhanced oil recovery.

UK- Lismore Offshore field Development plan project

(Industrial project- Supervised by TRacs Training/AGR- UK and Aberdeen University-UK**)**

- o Using Productivity improvement factor, I design a well trajectory and well placement for complex formation, mainly of faults and fractures as a results of periods of uplifts.
- o Based on the geology, pore pressure and fracture gradient, i developed a casing and drilling programme for the field.

Comparing Rheological Properties of Invert Emulsion drilling fluid Made from local clay, Biodegradable shear nut oil, Mineral Oil, and Diesel (Local Clay from Sunyani, Newmont Mines-Ghana)

- o Determined the effect of oil-to water ratio on drilling fluid properties such as, rheology, filtration Control, and stability.
- o Determined the compatibility of environmentally friendly emulsifiers, egg yolk and lecithin, with the Vegetable Oil Base Mud (VOBM) and stability that it accords.
- o Determined the optimal formulation of the VOBM based on the effects of oil/water ratio, emulsifier and Fluid loss control Additives on the VOBM
- o Determined whether the VOBM is suitable as a drilling fluid by comparing it to the formulated Diesel OBM and Mineral OBM.

Polymer flooding EOR project for a north sea sandstone reservoir rock.

- o Optimized the mobility control processes for a Lowsal flooding EOR

Complexity Scoring: A Method For Assessing or Predicting Potential Recovery Factors of Oil Fields

- o assessed the potential recovery factor of the Jubilee Oil Field of Ghana using a correlation chart developed from the complexity scoring approach.

Prediction of Production Plateau rate via Artificial Neural Network (BSc. Project work)

- o developed a model to predict the Oil production plateau rate of a field using Artificial Neural Network (ANN). Data set was generated from a simple box model constructed using Eclipse Simulator.

Work / Training Experience

Petroleum Recovery and Research Center – New Mexico Tech   Jan 2020 to date

- Research Assistant

University of Energy and Natural Resources (UENR-Ghana) - Assist. Lecturer   Aug. 2018 –Dec.2019

- Lecture undergraduate courses (Reservoir Engineering, Enhanced Oil Recovery and Production Eng.)
- Supervise two (2) undergraduate project group work in EOR and Application of AI in petroleum.

Pinnacle College – Ghana   Tutor (Part time)   June 2016 –to Aug.2018

- Effectively taught oil and gas economics ,project start Up and analysis and Energy Management

All Nations University College – Teaching/Research Assistant   Sept. 2015 –Feb.2018

- Assisted undergraduate courses; Formation Evaluation, Petroleum Recovery Methods and Offshore Technology.
- Delivered administrative tasks as internal auditing of exams scripts.
- Selected as a team member for moderation of final years graduation results both internally and externally (headed by Dr Lawrence Darkwa – KNUST).
- Led a three member committee in charge of publicity for the annual Oil and Gas Engineering Conference

Kwame Nkrumah University of science and Tech; Teaching/administrative assistant

Aug. 2014 – July 2015

- Effectively assisted students in tutorial sections and laboratory practical through demonstrations and presentations. (courses; Drilling engineering, Formation Evaluation, Petroleum Geology and Geoscience)
- Dealt efficiently with enquiries about student and academic affairs both in person and on phone.
- Enhanced computing skills through data entry and management using excel spreadsheets.
- Organized meetings and distributed memos as well as taking minutes at meetings.

Ghana National petroleum corporation; Intern   June -July 2012

- First hand exposure to activities in oil and gas industry. Took modules in well log interpretation, well test analysis, Reservoir engineering and Drilling engineering.

Justab Clinic Kasoa – Ghana; Trainee Lab Technician (Voluntary Service)   July 2009 – Aug. 2010

- Volunteered to be trained and assist with some hospital laboratory procedures such as; blood group determination, Malaria test, collection of blood samples, preparation of slides for microscopy, entry of lab results, cleaning and sterilization of laboratory equipment.

Skills

- ECLIPSE: Engaged this software for dynamic reservoir modeling by analyzing and optimizing Waterflooding and EOR operations
- KAPPA: Effectively used this software for pressure transient and Build-up analysis for reservoir characterization of North Sea wells.

- PROSPER - Employed this software for IPR and VLP analysis for oil wells.
- PVTp - Used this software for reservoir fluid characterization and phase behavior analysis.
- EXCEL- Effectively used this software for Cash flow and data analysis.

- **Report Writing**: Pivotal in co -authoring/authoring peer review journal publications as well as reports during my master's degree programme and my undergraduate program.

- **Presentation/Communication**: Proficient user of Microsoft PowerPoint. Indispensable for the defense of undergraduate, master's dissertations and Field development plan project.
  Enhanced through my role as a teaching assistant and as a brand ambassador for N2O brand activation company in United Kingdom**.**
- **Team work –** vital to the completion of an offshore field development project during my MSc. In Petroleum Engineering as well as a committee member of various student organizations and professional bodies.

Leadership/ extra-curricular activities

- Skill and development fund Research group member – UENR   current
- Sustainable hydropower energy generation conference planning team member-   current
- MSc. Petroleum Engineering Class representative, University of Aberdeen UK,   Sept.2016-Sept.2017
- Lismore Oil Field Development Project Team Leader, University of Aberdeen   Jan. 2017- April 2017
- Trade and technology fare committee chairman – SPE ,KNUST Ghana Chapter   Mar. 2014
- Consulting Design Olympiad committee member – NSBE, KNUST Ghana Chapter   2013- 2014
- Student Mentorship Program committee member – SPE, KNUST Ghana chapter   2012- 2013
- Organizing Committee member – SPE, KNUST Chapter   2012-2013
- National Union of Ghana student community service Team member   July 2013

Symposia and seminars attended

- Skills Development in Proposal Writing scheduled workshop - UENR
- Good Assessment Practices in Higher Education: Improving Teaching and Learning Workshop- UENR
- The role of tertiary institutions in the oil and gas Industry- International Conference, All Nations university college - Ghana
- Well complexity index –SPE Conference , All Nation Uni. Chapter
- Reservoir characterization; Schlumberger and SPE-KNUST
- Installation Engineering and offshore operations – Technip Ghana
- Drilling and Measurement, well stimulation and Cementing – Schlumberger
- Environmental Health and Safety – Kosmos Energy

Chronological Summary of Activities

Activity	Place/Institution	From	TO
PhD. Petroleum Engineering	New Mexico Tech – USA	Jan. 2020	to Date
Assistant Lecturer	University of Energy and Natural Resources-Ghana	Aug. 2018	Dec. 2019
M.Sc. Petroleum Engineering	University of Aberdeen – Scotland, UK	Sept. 2016	Sept.2017
Tutor (Part time)	Pinnacle College – Ghana	June 2016	Aug.2018
Teaching/Research Assistant	All Nations University College **(ANU)**-Ghana	Sept. 2015	Feb. 2018
Awaiting Job Posting at ANU	Home – Kasoa, Ghana	1 Aug. 2015	31 Aug 2015
Teaching/administrative assistant	Kwame Nkrumah Uni. of Sci. & Tech - Ghana	Aug. 2014	July 2015
Awaiting Service Posting	Home – Kasoa, Ghana	June 2014	July 2014
B.Sc. Petroleum Engineering	Kwame Nkrumah Uni. of Sci. & Tech - Ghana	Aug.2010	May 2014
Trainee Lab Technician (Voluntary Service)	Justab Clinic Kasoa – Ghana	July 2009	Aug. 2010
General Science	St. Peters Senior High – Ghana	Sep.2006	June2009
Junior High School	Servant King International – Kasoa-Ghana	Sept. 2003	July 2006