



JOINT REVIEW SESSION WITH PROFESSORIAL CHAIRS & CENTRES OF EXCELLENCE

REPORT OF SPDC JV-ARET ADAMS PROFESSORIAL CHAIR (SAAPC) UNIVERSITY OF PORT HARCOURT

PROF. S. S. IKIENSIKIMAMA
CHAIR OCCUPANT, SAAPC UNIPORT

Presentation Outline

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- 2021 targets/goals & Key performance indicators
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- Challenges/dilemmas
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Brief Introduction

- The Chair since its inauguration has been able to run smoothly after the initial hassles and submitted its initial work plan for 2021 last year August 2021.
- The Chair has contributed to human capacity development and mentorship in the Department of Petroleum and Gas Engineering through energy driven and innovative research in University of Port Harcourt and will continue to do so.
- The Chair also looks forward to assisting good students, collaborate with other researchers on quality research and also engage in quality research as a way to moving the Chair forward.



Brief Introduction

The Mission, Vision and Core Value of the Chair are:

- **Mission**

To meet the Research & Development (R & D) needs of the Oil and Gas Industry

- **Vision**

Harnessing Available Human Capital Potentials through Quality Research, Innovation and Collaboration

- **Core Values (DICT)**

Diligence, Integrity, Commitment and Teamwork

2021 Targets/Goals & Key Performance Indicators

- **Publications (Under Review)**

 - 5 Journal Articles

 - 2 Conference Papers

- **Patents**

 - ✓ The Chair has as its vision harnessing available human capital potentials through quality research, innovation and collaboration.

 - ✓ Some of these quality research has been able to produce innovation which need protections in the name of patents.

- **Filed Patent: Flavonoids in Formulation of Gas Hydrate Inhibitors**

2021 Achievements

Patent

- 1 filed

Publications

- 5 Journal Articles
- 2 Conference Papers

Mentorship (Students Graduating)

- 2 MScs
- 4 Ph. Ds
- 9 Undergraduates Graduated

2021 Achievements

- **Running of Flow Assurance Laboratory**

- ✓ 3 internal and 3 external students used the hydrate flow loop

- **Conference Attended**

- ✓ SPE Conference held Aug 2-4th 2021 with 2 Papers presented titled

- *Zingiberales Extract (ZE): A Locally Sourced Natural Compound as Gas Hydrate Inhibitor. Paper No. SPE-207154-MS*

- *Eco-Toxicity of 2-Di(methylamino)ethylmethacrylate (2-DMAEM) a Commercial Kinetic Hydrate Inhibitor (KHI). Paper No. SPE-207156-MS*

- International Association of Research Scholars & Administrators (IARSA)-SPDEG 2021 Conference held on the 10th -11th November 2021 at Institute (EEI), UniPort.

2022 Targets & key Performance Indicators

1. Workshop on pertinent industry software
2. Students quiz competition
3. Students paper contests.

The objectives of these programmes are:

- Enhance petroleum Engineering education in the University and beyond
- Enhance the visibility of the Chair
- Assist and encourage students in their academics

2022 Targets/Goals & Key Performance

Development of database for green hydrate inhibitors

- This will be done by carrying out experimental runs on some naturally sourced plant materials around to see their effect on gas hydrate formation.
- This database will help in model and software development in the area of flow assurance
- **Incorporating Holistic Flow Assurance Research** (Scales, Wax, Asphaltenes, Corrosion, Fluid Pumpability, etc.)
- The flow assurance lab is being revamped to bring it up to standard

Revamping the Drilling/Cementing Laboratory

- This is very critical as this will help open up and accelerate the research in drilling, drilling fluids and cementing

2022 Targets/Goals & Key Performance

Conference Attendance

- There will be paper presentations at Nigerian Annual International Conference and Exhibition (NAICE) from **1st - 3rd August 2022 In Lagos, Nigeria**
- Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC) -**31 October - 03 November 2022 in Abu Dhabi, UAE.**
- Other Conferences will likely be attended when the abstracts submitted return accepted. This will also be communicated in due course.

Mentorship and supervision of post graduate and undergraduate students

- 10 post graduates and five (5) undergraduates have been assigned for mentorship

2022 Targets/Goals & Key Performance

Attendance of short courses

- short courses especially in line with renewable energy.
- to reposition the Department (in terms of teaching and curriculum development) for the on-going energy transition.
- Help Chair give informed suggestions / advice to stake holders whenever the need arises.

Stake Holders Meeting

- To know their research needs of the donor
- Make possible suggestions on what would be relevant to donor.

2022 Achievements

❑ Patent Granted

Flavonoids in Formulation of Gas Hydrate Inhibitors

❑ Publication

1 Accepted for publication

Journal of Dispersion and Technology (JDST), Gas Hydrate Inhibition: Performance of an Agro-Waste Based Locally Formulated Inhibitor Article ID: LDIS207485 with publication DOI 10.1080/01932691.2022.2074858

❑ 3 under review

2022 Achievements

Conference Attendance

- ❑ Seven (7) draft manuscripts accepted for presentation at Nigerian Annual International Conference and Exhibition (NAICE) taking place in Lagos, Nigeria from 1st through 3rd August 2022.
- ❑ Paper proposal with number **SPE-211183-MS** accepted for presentation at ADIPEC 2022 taking place in Abu Dhabi, UAE from 31 October- 3 November 2022

2022 Look Ahead (Key Activities on Your Work Plan for 2022)

Key Activities for 2022 that have received approval but not yet done because of the strike are:

1. Workshop on pertinent industry software
2. Students quiz competition
3. Students paper contests.

Other planned activities that are under way include

Patents under Compilation (3 Nos.)

1. A New Approach of Controlling the Activities of Sulphate-Reducing Bacteria (SRB) in the Reservoir during Water Injection
2. Plant Gums in Formulation of Gas Hydrate Inhibitors
3. Plant Extracts in Formulation of Gas Hydrate Inhibitors

2022 Look Ahead (Key Activities on Your Work Plan for 2022)

Conference Attendance

- SPE NAICE 2022
- SPE ADIPEC 2022
- Other presentations will likely be attended when the abstracts submitted (EGYPS 2023) return accepted. This will also be communicated in due course.

Challenges/Dilemma

Some challenges faced in running the Chair are:

- ❑ Bureaucratic system that impede access to funds for smooth running of the Chair.
- ❑ Paucity of archived documents for the Chair
- ❑ Strike actions
- ❑ Lack of equipment to carry out quality research
- ❑ Lack of funds due to devaluation of the Naira and inflation

Values Added To SPDC Business and Yourself

The Chair seeks to harness potentials in R&D that can add value to the oil and gas industry, through reduction of importation cost that boosts the local content aspiration of NCDMB

- ❑ Patents on gas hydrate inhibitors (1 granted and 3 being documented) using local materials which reduces the effect of environmental footprint of synthetic products.
- ❑ A New Approach of Controlling the Activities of Sulphate-Reducing Bacteria (SRB) in the Reservoir during Water Injection.

Values Added To SPDC Business and Yourself

□ Human capital development for the academia

- Quality and innovative research
- Provision of laboratory equipment
- Opportunity to carry out studies for the benefactors .

□ Mentorship

- Manpower Development (critical mass of quality scholars)
- Sustained learning for the academia

Recommendations

- Stakeholders should ensure that the laboratories are well equipped and functional which will aid quality research.
- Review of the Emoluments for the Chair because of the rise in inflation and devaluation of the Naira.
- Review of routing of finances so as to remove impediments to smooth running of the Chair.
- Early dissemination of information to aid prompt and smooth operations.

Conclusions

- The Shell JV - Aret Adams Chair in Petroleum Engineering, University of Port Harcourt is grateful to our benefactors for renewing and retaining the Chair in our unique school after the long period of dormancy. We will put in our best to ensure that this confidence is not taken for granted.
- We also thank the Liaison Officer and his team for all their efforts in making sure that the Chairs are kept abreast of happenings and requirements to move the Chairs forward.
- We thank all the Stakeholders in the Shell JV

***THANK YOU
FOR YOUR
AUDIENCE***

