
Romanian Journal of Petroleum & Gas Technology

Areas:

Geological, Drilling and Production Engineering

Mechanical Engineering

Electrotechnics, Electronics and Automation Engineering

Chemical and Petrochemical Engineering

Renewable Energies and Environmental Protection

Edited by

Gheorghe-Adrian BRĂNOIU, Dorin-George BĂDOIU,
Otilia CANGEA, Timur CHIS, Raluca DRAGOMIR,
Cristian-Nicolae EPARU, Mariea MARCU, Silvian SUDITU

DOI: 10.51865/JPGT

VOL. V (LXXVI) No. 2 / 2024

DOI: 10.51865/JPGT.2024.02

pISSN 2734 – 5319

ISSN-L 2734 – 5319

eISSN 2972 – 0370



Scientific Board:

Michel Troquet (Polytech Clermont-Ferrand, France); Clovis Francis (Lebanese University, Lebanon); Rafic Younes (Lebanese University, Lebanon); Jan Golonka (AGH University of Science and Technology, Kraków, Poland); Tefy Raoelivololona (Université d'Antsiranana, Madagascar); Nam Nguyen Dang (Duy Tan University, Vietnam); Zulfan Adi Putra (Universiti Teknologi Petronas, Malaysia); Cătălin Teodoriu (University of Oklahoma, US); Mihai Arghir (Université de Poitiers, France); Sorin Radu (University of Petrosani); Maria Lazăr (University of Petrosani); Mihaela Toderaş (University of Petrosani); Ilie Onica (University of Petrosani); Roland Iosif Moraru (University of Petrosani); Florin Dumitru Popescu (University of Petrosani); Dacian Paul Marian (University of Petrosani); Valentin Petrescu ("Lucian Blaga" University of Sibiu); Alexandru Ozunu (Babeş-Bolyai University Cluj-Napoca); Oana Roxana Chivu (Polytechnic University Bucharest); Ionela Popovici (Ovidius University Constanta); Gabriela Stanciu (Ovidius University Constanta); Dumitru Gherghiceanu (OMV-Petrom); Vasile Stănculescu (OMV-Petrom - ICPT Câmpina); Niculae Napoleon Antonescu (Petroleum-Gas University of Ploieşti); Stelian Dumitrescu (Petroleum-Gas University of Ploieşti); Alin Diniţă (Petroleum-Gas University of Ploieşti); Daniela Popovici (Petroleum-Gas University of Ploieşti); Răzvan George Rîpeanu (Petroleum-Gas University of Ploieşti); Marius Gabriel Petrescu (Petroleum-Gas University of Ploieşti); Lazăr Avram (Petroleum-Gas University of Ploieşti); Mihai Albulescu (Petroleum-Gas University of Ploieşti); Maria Stoicescu (Petroleum-Gas University of Ploieşti); Cătălin Nicolae Popescu (Petroleum-Gas University of Ploieşti); Iuliana Ghetiu (Petroleum-Gas University of Ploieşti); Mihaela Caltaru (Petroleum-Gas University of Ploieşti); Cangea Otilia (Petroleum-Gas University of Ploieşti); Dragos Ciuparu (Petroleum-Gas University of Ploieşti); Dorin Bombos (Petroleum-Gas University of Ploieşti)

Romanian Journal of Petroleum & Gas Technology Editor-in-chief:

Gheorghe-Adrian Brănoiu

Romanian Journal of Petroleum & Gas Technology Executive Editors:

Dorin-George Bădoi, Otilia Cangea, Timur Chis, Raluca Dragomir, Cristian-Nicolae Eparu, Maria Marcu, Silvian Suditu

Romanian Journal of Petroleum & Gas Technology is an open access, peer-reviewed, international scientific journal in the petroleum and gas field, published two times per year, and continues the long tradition established by the old periodicals of the Petroleum-Gas University Ploieşti, with the first issue appearing in the year 1956, in Bucharest, and continuing in Ploieşti since 1973, and especially Petroleum-Gas University of Ploieşti Bulletin - Technical Series (ISSN 1224-8495) (1992-2019), whose successor it is.

The topic of the published papers covers all the fields linked to the petroleum and gas industry: oil wells drilling, oil and gas reservoirs production, petroleum geology and geophysics, petroleum products transportation and storage, petroleum technology and petrochemistry, renewable energies, environmental protection, petroleum and oilfield equipment (design, optimization, production, materials and technologies), electrotechnics, electronics and automation in the petroleum industry a.o.

website: <http://jpgt.upg-ploiesti.ro/>

Editorial Office: Petroleum-Gas University of Ploieşti

Bd. Bucureşti, No. 39, Ploieşti, Romania

Tel.: 0244 575292; Fax: 0244 575847

e-mail: bull-st@upg-ploiesti.ro

* The authors have the all legal and moral responsibility for the content of the papers



CONTENTS

1. CONTRIBUTION TO THE GEOCHEMICAL STUDY OF KANZI AND MVUANGU PHOSPHATE ROCKS IN THE LEMBA OIL SUB-BASIN OF CENTRAL CONGO – Deko Oyema Bruno, Emmanuel Kazinguvu Atibu, Dan Mandjumba Yenor, Dominique Wetshondo Osomba, Loma Wonga Mathias, John Pote Wembonyama	05-22
2. ANALYSIS OF FRACTURE GEOMETRY IN FLUID DRAINAGE AFTER HYDRAULIC FRACTURING. CASE OF WINK MS-09 IN MAKELEKESE FIELD, DR CONGO – Rachidi Opuluku, Joel Etshekodi Lohadje, Olivier Kimpesa Dyesse, Gracias Kingombe Manianga, Jean Iyolo Lungembo, Dirk Akili Bihivu	23-42
3. A NUMERICAL SIMULATION TO DETERMINE THE BEHAVIOR OF THE HYDROGEN-NATURAL GAS MIXTURE IN DISTRIBUTION NETWORKS – Bogdan Andrei Ionete, Mihai Albulescu, Sorin Gal, Alexandra Damascan	43-56
4. EXPERIMENTAL INVESTIGATION OF THE FEASIBILITY OF CORNCOB ACTIVATED CARBON FOR ADSORBED NATURAL GAS STORAGE – Peter Oghenenyore Nelson, Wilfred Chinedu Okologume	57-74
5. THE DESIGN AND IMPLEMENTATION OF AN AUTOMATED CNC TYPEWRITER – George-Cristian Ene, Gabriela Bucur	75-86
6. RESERVOIR CHARACTERIZATION OF THE CHELA FORMATION OF THE NSIAMFUMU AND LIAWENDA FIELDS IN THE ONSHORE COASTAL BASIN, D.R. CONGO – Kalunga Sina-Nduku Tryphene, Deko Oyema Bruno, Link Bukasa Muamba, Pierre Paty Tshibumbu Kayeya, Emmanuel Kazinguvu Atibu, Dominique Wetshondo Osomba	87-104
7. DC MOTOR ANGULAR POSITION CONTROL SYSTEM USING ARDUINO PLATFORM – Dragos-Ioan Matei, Alexandru Negroiu, Gabriela Bucur	105-118
8. STRUCTURAL MODELLING OF THE OIL POTENTIAL OF THE WEST CONGOLIAN SUB-BASIN THROUGH THE IDENTIFICATION OF GEOLOGICAL STRUCTURES AND GRAVIMETRIC ANOMALIES – Osée Mayinga Mayinga, Joël Etshekodi Lohadje, Franck Tondozi Keto, Prosper Aida Monkenya, Marlin Agolo Monza	119-130
9. A COMPARATIVE STUDY OF DEEP LEARNING METHODS APPLIED FOR WASTEWATER pH NEUTRALIZATION PROCESS MODELLING – Mădălina Cărbureanu	131-146
10. CHARACTERIZATION OF ISOBATHS IN THE CENOMANIAN RESERVOIR OF THE MUANDA FIELD – IMPLICATIONS FOR OPTIMAL OIL RESOURCE MANAGEMENT – Marlin Agolo Monza, Franck Tondozi Keto, Raphael Matamba Jibikila, Yves Bolokole Mpehenzale, Osée Mayinga Mayinga	147-158



11. TREATMENT OF RIVER AND LAKE WATER FOR ALGAE USING NANOBUBBLES – Dan Ovidiu Cîrjan, Maria Stoicescu	159-176
12. EVALUATING THE ENVIRONMENTAL IMPACT OF DIFFERENT ENERGY SOURCES, FOSSIL OR ALTERNATIVE, THROUGH THE LIFE CYCLE ASSESSMENT METHOD – Liana Bogatu	177-184
13. IMPROVEMENT OF OIL PRODUCTION BY MATRIX ACIDIZING OF A WELL IN SANDSTONE RESERVOIR – Darel Sontia Fouazong, Isidore Komofor Ngongiah, Andre Cheage Chamgoue, Alain Francis Talla, Jean Jacques Dikongue Jemea	185-200
14. RESEARCH CONCERNING THE POSITIONAL ANALYSIS OF A FOURTH CLASS MECHANISM – Georgeta Toma	201-208
15. RESEARCH ON THE SIMULATION OF THE OPERATION OF ROBOTIC MECHANISMS – Georgeta Toma	209-216
16. NEW NUMBER NUSSELT CORRELATION FOR THE ANNULAR SPACE OF THE TUBE IN TUBE HEAT EXCHANGER – Maria Popa	217-226
17. RESEARCH ON THE OPTIMAL SYNTHESIS OF THE MULTI-COINTOUR MECHANISM – Dorin Badoiu	227-234
18. ANALYSIS OF POROSITE-NEUTRON (NPHI) LOGGING DATA FROM THE KINKASI FIELD: THE CASE OF THE G UP, F AND E HORIZONS OF THE CENOMANIAN RESERVOIR (D.R. CONGO COASTAL BASIN) – Djonive Munene Asidi, Thomas Kanika Mayena, Emmanuel Manteko Matondo, Djeskin Nsitu Nsitu, Jeff Biduaya Ngalamulume, Augustin Bangama Kabongo	235-248
19. RHEOLOGICAL PROPERTIES OF INDOLIC ALKALOIDS OBTAINED FROM NATURAL PRODUCTS – Ana-Maria Neculai, Anamaria Niculescu, Iuliana Cristea	249-260
20. IoT SOLUTION FOR LEVEL MEASUREMENT IN THE OIL AND GAS INDUSTRY – Constantin Octavian Bercea	261-278
21. STUDY OF THE PETROPHYSICAL CHARACTERISTICS OF ROCKS FROM THE LIBWA FIELD IN THE PINDA RESERVOIR IN THE D.R. CONGO COASTAL BASIN – André Yelembangu Ngwey, Jean Iyolo Lungembo, Dona Kampata Mbwelele, Gustave Ngalamulume Bantu, Néhémie Bikayi Tshiani, Rachidi Opuluku	279-290
22. PHYSICS-DRIVEN FEATURE CREATION TO IMPROVE MACHINE LEARNING MODELS PERFORMANCE FOR OIL PRODUCTION RATE PREDICTION – Eghbal Motaei, Seyed Mehdi Tabatabai, Tarek Ganat, Ahmad Khanifar, Sulaiman Dzaiy, Timur Chis	291-306
23. MODELING OF THE ZONES OF INFLUENCE OF GAS WELLS AT A DEPLETED RESERVOIR – Ioan Alexandru Stoica, Lazăr Avram, Bogdan Simescu, Mihaela Helstern	307-331