

# **SPE International Conference and Exhibition on Formation Damage Control 2020**

Lafayette, Louisiana, USA  
19 - 21 February 2020

Volume 1 of 2

ISBN: 978-1-7138-0742-1

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© (2020) by Society of Petroleum Engineers  
All rights reserved.

Printed with permission by Curran Associates, Inc. (2020)

For permission requests, please contact Society of Petroleum Engineers  
at the address below.

Society of Petroleum Engineers  
P. O. Box 833836  
Richardson, Texas 75083-3836

Phone: (800) 456-6863  
Fax: (972) 952-9435

[books@spe.org](mailto:books@spe.org)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2633  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

## VOLUME 1

### DAY 1

#### SESSION 1: FRACTURING

THE IMPACT OF CONTRACTIONAL FLOW ON THE EXTENSIONAL VISCOSITY OF POLYACRYLAMIDE POLYMERS IN FRACTURING APPLICATIONS .....	1
<i>C. Fischer, V. Constien, B. Cage</i>	
A NOVEL NANOTUBE/VES-BASED HIGH TEMPERATURE HIGH PRESSURE FRACTURING FLUID .....	15
<i>S. Afra, H. Samouei, R. Mahmoudkhani, H. Nasr-El-Din</i>	
NEW HIGH VISCOSITY FRICTION REDUCERS FOR PROPPANT TRANSPORT IN HYDRAULIC FRACTURING .....	30
<i>J. Song, R. Navarrete, M. Asadi, B. Jin</i>	
PERFORMANCE COMPARISON OF NOVEL CHEMICAL AGENTS FOR MITIGATING WATER-BLOCKING PROBLEM IN TIGHT GAS SANDS .....	38
<i>H. Huang, T. Babadagli, X. Chen, H. Li, Y. Zhang</i>	
A CONCISE REVIEW OF EXPERIMENTAL WORKS ON PROPPANT TRANSPORT AND SLURRY FLOW .....	52
<i>M. Roostaei, A. Nouri, S.A. Hosseini, M. Soroush, A. Velayati, M. Mahmoudi, A. Ghalambor, V. Fattahpour</i>	
VISUALIZATION OF FLOWBACK AID MECHANISMS UTILIZING A MICROFLUIDIC PORE-SCALE DEVICE .....	93
<i>G. Ren, A. Abedini, H. Tang, A. Sanders</i>	

#### SESSION 2: PERFORATING DAMAGE

FILTER CAKE BREAKER EVALUATION FOR WATER INJECTORS: SCALE UP FROM LABORATORY TO FIELD DEPLOYMENT .....	103
<i>P. Chandran, A. Kumar, I. Cameron, P. Jackson, A. Twynam, R. Reid, K. Sweeney</i>	
TEST RESULTS FIELD & LAB FOR A NEW COMPOSITE PERFORATING METHOD THAT INTEGRATES PROPELLANT AND SHAPED CHARGES .....	121
<i>L. Albert</i>	
PERFORATING CRUSHED ZONE FRACTURE MECHANISM .....	144
<i>G.G. Craddock, F. Rios</i>	
QUANTITATIVE ANALYSIS OF THE EFFECT OF PERFORATION INTERACTION ON PERFORATION STABILITY USING THE FINITE ELEMENT METHOD .....	157
<i>N. Araki, N. Morita</i>	
EVALUATING FORMATION DAMAGE AND REMEDIATION METHODS: PHYSICAL SIMULATION OF LEAK-OFF AND FLOWBACK .....	186
<i>S. Tran, A. Habibi, H. Dehghanpour, M. Hazelton</i>	

### **SESSION 3: FLOW ASSURANCE**

REMOVING SCALE DAMAGE WITH FAST-ACTING ANHYDRITE CASO4 REMOVAL SYSTEM .....	205
<i>E. Reyes-Garcia, K. Holan</i>	
HOLISTIC APPROACH FOR A SUCCESSFUL SCALE SQUEEZE TREATMENT USING CORE FLOOD DATA FROM OTHER RESERVOIR .....	216
<i>J.D. Sundramoorthy, M.F. Ibrahim, N.F. Nordin, M.A.A. Rahim, W.A.W. Ismail</i>	
MANUSCRIPT TITLE: PARAFFIN/ASPHALTENE CLEANING FORMULATIONS-LAB DESIGN AND CASE STUDIES .....	234
<i>C. Stanciu, J.M. Fernandez</i>	
INVESTIGATION INTO EMULSION BLOCKAGE REMOVAL USING THERMOCHEMICAL FLUID .....	245
<i>O. Alade, A. Hassan, D. Al Shehri, M. Mahmoud, A. Nakhli, M. Bataweel</i>	
DOWNHOLE SCALES ASSOCIATED WITH OCTOBER FIELD FORMATION WATERS AND WATER INJECTION USING A SHALLOW AQUIFER .....	255
<i>M. Askar, A. Abdallah, I. Gad</i>	

### **SESSION 4: CASE HISTORIES I**

SUCCESSFUL IMPLEMENTATION AND EFFECTIVE HYDRAULIC FRACTURING OF JURASSIC, HPHT AND TIGHT CARBONATE RESERVOIR IN THE STATE OF KUWAIT: A CASE STUDY OF AN EXPLORATION WELL .....	268
<i>F. Al-Otaibi, H. Al-Bader, A. Al-Ibrahim, P. Subban, V.S. Duggirala, M. Ayyavoo</i>	
ADVANCED INTERVENTION WORKFLOW BRINGS HIGH-PRESSURE JETTING TO NEW HEIGHTS OF EFFECTIVENESS AND ENABLES UNPRECEDENTED INJECTION COVERAGE IN TIGHT CARBONATE RESERVOIRS .....	277
<i>S.M. Abdelrehim, D. Gutierrez, S. Punnapala, M.H.Q. Subaihi, G. Raja, N. Molero, A. Mhiri, J. Rivas, P. Ramondenc, W. Belkadi</i>	

### **SESSION 5: ACIDIZING I**

RE-STIMULATION OF HORIZONTAL WELL WATER INJECTORS IN THE DANISH HALFDAN FIELD USING A REVISED DIVERSION APPROACH .....	293
<i>B. Ritchie, S. Thomson, B. Kiyabayev, F. Oliveira-Martinez, R. Carter</i>	
NUMERICAL INVESTIGATION OF WORMHOLE FORMATION DURING MATRIX ACIDIZING OF CARBONATE ROCKS BY COUPLING STOKES-BRINKMAN EQUATION WITH REACTIVE TRANSPORT MODEL UNDER RADIAL FLOW CONDITIONS .....	307
<i>T. Yuan, G. Qin</i>	
MATRIX ACIDIZING, WHAT HAVE WE MISSED: A CASE STUDY OF A LARGE MIDDLE EAST CARBONATE FIELD .....	321
<i>K. Mudaliar, M.K.A. Shah, Z. Salleh</i>	
RETARDING HCL ACID REACTIVITY WITHOUT GELLING AGENTS, EMULSIFIERS, OR POLYMERS FOR LOW TO HIGH TEMPERATURE ACIDIZING APPLICATIONS .....	333
<i>E. Reyes, A. Beuterbaugh, P. Ashcraft, R. Pires, H. Althoff</i>	

A REVIEW OF ORGANIC ACIDS ROLES IN ACIDIZING OPERATIONS FOR CARBONATE AND SANDSTONE FORMATIONS.....	344
<i>L. Alhamad, A. Alrashed, E. Al Munif, J. Miskimins</i>	

### **SESSION 6: WATER CONTROL**

GAS PRODUCTION ENHANCEMENT BY POLYMER TREATMENT.....	378
<i>A. Zaitoun, A. Templier, L. Hernando</i>	
MITIGATION OF FORMATION DAMAGE CAUSED BY CHEMICAL OVERDOSING IN WATER SHUT-OFF TREATMENTS .....	392
<i>I. Lakatos, G. Szentes, M. Toro, Z. Karaffa, A. Vago</i>	
SUCCESSFUL WATER SHUTOFF CHEMICAL TREATMENT IN HORIZONTAL OPENHOLE COMPLETION IN CARBONATE RESERVOIR.....	409
<i>A. Istayev, N. Nurlybayev</i>	
EMULSIFIED POLYMER GEL PICKERING EMULSION FOR CONFORMANCE CONTROL: EMULSION FORMULATION, STABILITY AND COREFLOODING INVESTIGATION.....	419
<i>T. Saikia, A. Sultan, A. Barri, A. Shamsan</i>	
A NOVEL RELATIVE PERMEABILITY MODIFIER POLYMER.....	428
<i>C. Yang, R. Navarrete, M. Asadi</i>	

### **SESSION 7: KNOWLEDGE SHARING EPOSTERS I**

RESTORING WELL PRODUCTIVITY SUFFERS FROM COMPLEX ORGANIC AND INORGANIC DEPOSITION IN MALAYSIAN OIL PRODUCERS: CASE STUDY AND LESSON LEARNT .....	440
<i>S.R.M. Shafian, A.I.A. Bakar, B. Abdulaev, D.H.Z. Xin, K.M.A. Aziz, Y.H. Yap, S.M. Sariffudin, H.A. Rahman, N. Minggu, M.F.M. Fauzi, C.S. Ting, D. Kamat, J.M.M. Ibrahim</i>	
PREVENTION OF CORE JAMMING AND DAMAGE DURING CORING OPERATIONS BY OPTIMIZATION OF DRILLING PARAMETERS – ANALYSIS OF CASE STUDIES .....	456
<i>R. Ashena, M. Lotfi, A. Ghalambor</i>	
A NOVEL APPROACH TO UNIFORMLY ACID STIMULATE CARBONATE TIGHT FORMATION UTILIZING MULTI JETTING TOOL TECHNOLOGY .....	470
<i>Z. Al Binhaji, A. Al Ghamdi, B. Sabut, D. Hicks</i>	
UPSCALING LABORATORY FORMATION DAMAGE TEST DATA.....	479
<i>M. Byrne, L. Djayapertapa, K. Watson, R. Kandasamy</i>	
OVERCOMING FORMATION DAMAGE IN A CARBONATE RESERVOIR ROCK DUE TO ASPHALTENE DEPOSITION.....	488
<i>B. Altemeemi, F.A. Gonzalez, D.L. Gonzalez, S. Jassim, F. Snasiri, A. Al-Nasheet, Y. Al-Mansour, A. Ali, B. sheikh</i>	
CHALLENGES AND POTENTIALS FOR SAND CONTROL DESIGN AND MANAGEMENT IN OIL RESERVOIRS OF KAZAKHSTAN.....	505
<i>M. Soroush, S.A. Hosseini, M. Roostaei, P. Pourafshary, M. Mahmoudi, V. Fattahpour</i>	

FIRST USE OF A NEWLY DEVELOPED HIGH-DENSITY BRINE IN AN OIL-BASED SCREEN RUNNING FLUID IN A MULTILATERAL EXTENDED REACH WELL: FLUID QUALIFICATION, FORMATION DAMAGE TESTING, AND FIELD APPLICATION, OFFSHORE NORWAY .....	521
<i>B. Salmelid, M.H. Strand, D. Clinch, C. Davis, E. Jeurissen</i>	
WELL PRODUCTIVITY IMPROVEMENT USING RADIAL JET DRILLING .....	541
<i>R. Ashena, R. Mehrara, A. Ghalambor</i>	
EFFECTS OF KAOLINITE ON FINES MIGRATION AND FORMATION DAMAGE .....	554
<i>K. Prempeh, L. Chequer, A. Badalyan, P. Bedrikovetsky</i>	

## **DAY 2**

### **SESSION 8: CASE HISTORIES II**

INTEGRATED FORMATION EVALUATION WITH ADVANCED WELL LOGS, STRADDLE-PACKER MINI DRILLSTEM TESTS, AND A SURFACE SHUT-IN WELL TEST TO REEVALUATE A MATURE TIGHT FIELD .....	575
<i>M. Azari, G.M. Hashmi, F. Hamza, H. Tahani, J. Quirein, A. Ghalambor</i>	
CASE HISTORIES OF EXTENDED SCALE PREVENTION FROM SINGLE TREATMENT OF CHEMICALLY INFUSED, SLOW RELEASE MEDIA .....	595
<i>J. Leasure, M. Marotz</i>	
IMPROVING WELL PRODUCTIVITY AND SUSTAINABILITY IN A HORIZONTAL EXPLORATORY WELL BY MULTISTAGE FRACTURING - A CASE STUDY .....	606
<i>S. Almulla, H. Al-Bader, A. Al-Ibrahim, P. Subban, V.S. Duggirala, M.M. Ayyavoo</i>	
CASE STUDY: BARIUM SULFATE SCALE REMOVAL BY DYNAMIC UNDERBALANCE .....	617
<i>W.M. Mahmud, M. Ermila</i>	

## **VOLUME 2**

WELL PRODUCTIVITY EVALUATION AND IMPLICATIONS FOR THE SIGNIFICANCE OF FORMATION DAMAGE: OSEBERG MAIN CASE HISTORY .....	630
<i>N. Flemin, E. Moldrheim, E. Teigland, A.M. Mathisen</i>	
SUCCESSFUL APPLICATION ANALYSIS OF DOUBLE WATER CONTROL IN FRACTURED REEF RESERVOIR IN LIUHUA OILFIELD .....	646
<i>D. Luo, Z. Dai, Y. Wang, B. Pei, H. Wang, Z. Shen, H. Zhu</i>	

### **SESSION 9: ACIDIZING II**

MINIMIZING CALCIUM LACTATE PRECIPITATION VIA THE ADDITION OF GLUCONATE IONS FOR MATRIX ACIDIZING WITH LACTIC ACID .....	653
<i>L. Alhamad, J. Miskimins</i>	
DIGITALIZATION OF MATRIX STIMULATION WORKFLOW - EFFICIENT CANDIDATE SCREENING IN A BLINK OF AN EYE .....	679
<i>S.J.M. Jeffry, K. Trjanganung, B. Madon, S.M.J. Berok, A.M. Arifin, R. Hermann, A. Baker</i>	

EVALUATION OF INORGANIC-CROSSLINKED-BASED GELLED ACID SYSTEM FOR HIGH-TEMPERATURE APPLICATIONS .....	694
<i>F. AlOtaibi, M. Dahlan, M. Khaldi, A. AlGhamdi, I. Al-Hulail</i>	
INVESTIGATING THE ROLE OF SURFACTANT IN OIL/WATER/ROCK SYSTEMS USING QCM-D.....	707
<i>D. Benoit, I.W.R. Saputra, A. Recio III, K. Henkel-Holan</i>	
DECISION CRITERION FOR ACID STIMULATION METHOD IN CARBONATE RESERVOIRS: MATRIX ACIDIZING OR ACID FRACTURING? .....	725
<i>M.P. Schwalbert, M.S. Aljawad, A.D. Hill, D. Zhu</i>	

### **SESSION 10: DAMAGE DUE TO WELL CONSTRUCTION**

ENGINEERED RESERVOIR DRILLING FLUID HELP MAXIMIZE PRODUCTION IN GULF OF MEXICO DEEPWATER HORIZONTAL WELL .....	754
<i>S. Wallace, J. Beeson, F. Dalton, E. David, I. Henry</i>	
SUCCESSFUL APPLICATION OF NON-DAMAGING DRILL-IN-FLUIDS PROVES OIL PRODUCTION IMPROVEMENT IN HEAVY OIL RESERVOIRS .....	773
<i>M.K. Mohammadi, K.T. Nowtarki, A. Ghalambor</i>	
A NEW-INTERMEDIATE STRENGTH PROPPANT ADDITIVE TO COMBAT ASPHALTENE DEPOSITION FOR DELIVERING LONG TERM FLOW ASSURANCE.....	786
<i>N. Bestaoui-Spurr, M. Usie, S. Bhaduri</i>	
LOST CIRCULATION MATERIAL IMPLEMENTATION STRATEGIES ON FLUID LOSS REMEDIATION AND FORMATION DAMAGE CONTROL .....	799
<i>M. Yang, Y. Chen</i>	
USING PARTICLE SIZE THEORIES TO OPTIMIZE BRIDGING SOLIDS FOR POST-GRAVEL-PACK SCREENS .....	811
<i>S. Abiodun, J.M. Vincent, K. Schultz, E. Rapp</i>	
A COMPREHENSIVE RHEOLOGICAL STUDY FOR A FLOWING POLYMER-BASED DRILLING FLUID USED FOR WELLBORE STRENGTHENING.....	819
<i>M.I. Magzoub, S. Salehi, I.A. Hussein, M.S. Nasser</i>	

### **SESSION 11: KNOWLEDGE SHARING EPOSTERS II**

PROFILING THE PRODUCTION PERFORMANCE OF FIVE HPHT GAS CONDENSATE WELLS DRILLED AND COMPLETED WITH HIGH-DENSITY CESIUM FORMATE FLUIDS IN THE BRENT GROUP FORMATIONS OF THE KVITEBJØRN FIELD .....	832
<i>J.D. Downs, N. Fleming</i>	
NON-MONOTONIC RETENTION PROFILES OF SUSPENDED PARTICLES UNDER WATER INJECTION .....	854
<i>N. Khazali, G. Malgaresi, P. Bedrikovetsky</i>	
LABORATORY EVALUATION OF MUD SYSTEMS FOR DRILLING HIGH CLAY SHALES IN DYNAMIC CONDITIONS: COMPARISON OF INHIBITIVE SYSTEMS .....	879
<i>N. Konate, M. Magzoub, S. Salehi, A. Ghalambor, M. Mokhtari</i>	

COMPARISON OF VARIOUS PARTICLE SIZE DISTRIBUTION MEASUREMENT METHODS: ROLE OF PARTICLE SHAPE DESCRIPTORS .....	892
<i>M. Roostaei, M. Soroush, S.A. Hosseini, A. Velayati, A. Alkouh, M. Mahmoudi, A. Ghalambor, V. Fattahpour</i>	
ANALYSIS OF TIME LAPSE FORMATION DAMAGE EVOLUTION THROUGHOUT THE LIFE OF A WELL.....	924
<i>S. Bellabiod, A. Deghmoum, H.Y. Madani, O. Karacali, Y. Shumakov</i>	
ADVANCED CONTROL OF COILED TUBING DOWNHOLE TOOLS ADDRESSES EXTREME PERMEABILITY CONTRAST OF CARBONATE WATER INJECTORS AND LEADS TO UNPRECEDENTED RESERVOIR SWEEP EFFICIENCY .....	943
<i>M. Aglyamov, N. Molero, F. Nabki, A. Mhiri, M. Momin, H.E. Al-Mashhadani</i>	
LESSONS LEARNED TO AVOID FORMATION DAMAGE DEVELOPMENT DURING WASTE SLURRY INJECTION OPERATIONS.....	956
<i>Y. Panchal, O. Sameh, N. Mounir, M. Shams, I. Mohamed, O. Abou-Sayed, A. Abou-Sayed</i>	
FORMATION DAMAGE EVALUATION IN NATURALLY FRACTURED RESERVOIRS USING A LABORATORY-CALIBRATED MULTI-PHASE FLOW NUMERICAL SIMULATOR.....	969
<i>K. Diez, N. Bueno, J. Mejia, A. Restrepo, J. Vallejo</i>	
MINERAL SOLUBILITY MEASUREMENT AND PREDICTION UNDER HIGH PRESSURE, HIGH TEMPERATURE RESERVOIR CONDITIONS.....	983
<i>N. Goodwin, M. May, S. Wilson, G. Graham</i>	
THE DEVELOPMENT OF THE TRENDS IN FORMATION DAMAGE REMOVAL TECHNOLOGIES IN SANDSTONE RESERVOIRS.....	993
<i>A. Maltcev, G. Shcherbakov</i>	
IMPACT OF OIL SATURATION, CO <sub>2</sub> EVOLUTION, AND ROCK WETTABILITY ON ACID EFFICIENCIES DURING CARBONATE ACIDIZING: A THREE-PHASE PERSPECTIVE .....	1002
<i>H.T. Kumar, S. Muhemmed, H.A. Nasr-El-Din</i>	

## **SESSION 12: SAND CONTROL**

FIRST OPEN HOLE GRAVEL PACK WITH AICD IN ULTRA DEEP WATER .....	1022
<i>C.A. Pedroso, C. Latini, Z. Araujo, P. Garcia, R. Soares</i>	
UNDERSTANDING SAND CONTROL INSTALLATION FAILURES.....	1037
<i>R. Tibbles, K. Govinathan, I. Mickelburgh, S. Jain, P. Wassouf</i>	
APPLICATION OF NEW TECHNOLOGIES TO GOM FOR A SUCCESSFUL OPEN HOLE GRAVEL PACK.....	1051
<i>K. Rodrigues, W. Kevin, R. Lawrence, N. Kerimov, I. Henry, L. Brune, J. Spicer, C. Nwafor, C. Gutierrez, J. Filbrandt</i>	
RESERVOIR OPTIMIZED CONFORMABLE SAND CONTROL COMPLETION IN OIL RESERVOIRS.....	1068
<i>W. Li, O.B. Moreno, C. Malbrel</i>	
UNPLUGGING STANDALONE SAND CONTROL SCREENS WITH HIGH-POWER SHOCK WAVES: AN EXPERIMENTAL STUDY .....	1083
<i>A. Habibi, C. Fensky, M. Perri, M. Roostaei, V. Fattahpour, M. Mahmoudi, A. Ghalambor, M. Sadrzadeh, H. Zeng</i>	



FULL-SCALE PHYSICAL MODELING OF STAND-ALONE SCREENS FOR THERMAL PROJECTS.....	1101
<i>V. Fattahpour, M. Roostaei, M. Soroush, S.A. Hosseini, K. Berner, M. Mahmoudi, A. Al-Hadrami, A. Ghalambor</i>	

### **SESSION 13: NEW DEVELOPMENTS**

ENHANCEMENT OF WATER IMBIBITION IN SHALES BY USE OF KETONE SOLVENT .....	1113
<i>F.J. Arguelles-Vivas, M. Wang, G.A. Abeykoon, R. Okuno</i>	

NANOCELLULOSE AS A NEW DEGRADABLE SUSPENSION ADDITIVE FOR HIGH-DENSITY CALCIUM BRINES .....	1134
<i>J.P. Deville, A. Rady, H. Zhou</i>	

A NOVEL SHIFTING TOOL TO OPERATE FORMATION ISOLATION VALVES .....	1145
<i>G. Balasubramanian</i>	

REINFORCEMENT OF POLYACRYLAMIDE-CO-TERT-BUTYL ACRYLATE BASE GEL USING NANOSILICA FOR CONFORMANCE CONTROL AT LOW AND HIGH RESERVOIR TEMPERATURES.....	1155
<i>M. Shamlooh, A. Hamza, I.A. Hussein, M.S. Nasser, S. Salehi</i>	

DIGITAL OILFIELD: REVIEW OF REAL-TIME DATA-FLOW ARCHITECTURE FOR UPSTREAM OIL AND GAS RIGS .....	1163
<i>B. Sletcha, C. Vivas, F.K. Saleh, A. Ghalambor</i>	

SPATIAL AND TEMPORAL PATTERNS IN PARTICLE RETENTION IN VUGGY POROUS MEDIA.....	1176
<i>H.J. Khan, M. Prodanovic, D. DiCarlo</i>	

### **SESSION 14: CEMENTING DAMAGE CHALLENGES**

AN INNOVATIVE SPACER SYSTEM DESIGNED WITH BIODEGRADABLE POLYMER AND LOSS CIRCULATION MATERIAL TO AID IN FORMATION DAMAGE CONTROL.....	1188
<i>V. Ramos, A. Doan, A.M. Ekwue, M. Kellum</i>	

INTRODUCTION OF NEWLY DEPLOYED WELLBORE CLEANING TECHNIQUE.....	1197
<i>H. Al-Tammer, H. Al-Ghafli, B. Davidson, A. Abouakar</i>	

MWD AND MPD SYSTEM COMBINATION SUCCESSFULLY MANAGES ULTRA-HIGH LCM CONCENTRATIONS AND CEMENT SLURRIES IN LOSS SCENARIOS.....	1209
<i>A. Valerio, G.L. Carvalho</i>	

A NOVEL APPROACH TO SALVAGING WELL COMPLETIONS WITH MUD DAMAGE USING A SPECIALIZED FLUID SYSTEM; THE FIRST CASES IN NIGERIA.....	1218
<i>E. Ogbunuju, Y. Ibrahim, O. Imbazi, U. Ukpe, D. Burts, C. Justus</i>	

SUCCESSFUL WELLBORE CLEANUP USING ENVIRONMENTALLY FRIENDLY CHEMICALS TO ENHANCE WELL PRODUCTIVITY .....	1235
<i>H.K. Sharma, Q. AlKhalifah, A.K. Al-Mulhim, M.J. Al-Shammari</i>	

CURING LOST CIRCULATION IN FRACTURED RESERVOIRS USING A LEVEL-OFF CEMENT PLUGGING METHOD- CASE STUDIES IN DRILLING AND WORKOVER APPLICATIONS.....	1247
<i>R. Ashena, A. Ghalambor, A.A. Hekmatinia</i>	

### **Author Index**