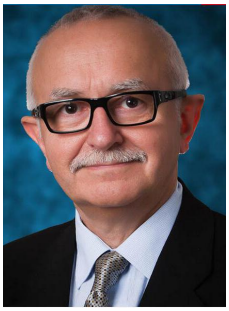
Attachment 2: Keynote speaker introduction and summary of the presentation

1. Keynote speaker: Saeed Al Mubarak



Introduction: Jacek M. Zurada is a Foreign Member of the Polish Academy of Sciences. His recognized achievements include extension of complex-valued neurons to associative memories and percepton networks; sensitivity concepts applied to multilayer neural networks; application of networks to clustering, biomedical image classification and drug dosing; blind sources separation; and rule extraction as a tool for prediction of protein secondary structure. His other contributions include "lambda" learning rule of perceptron and invention of a switching hysteresis phenomena of NMOS and CMOS logic gates. His honors include the 1993 Presidential Award for Research, Scholarship and Creative Activity, 1997 Polish Ministry of National Education Award, 1999 IEEE Circuits and Systems Society Golden Jubilee Medal, and the 2001 Presidential Distinguished Service Award for Service to the Profession. He is a Distinguished Speaker of IEEE Systems, Man and Cybernytics Sociaty and IEEE Life Fellow. In 2003 he was conferred the Title of National Professor by the President of Poland.

2. Keynote speaker: Saeed Al Mubarak

Introduction: Saeed Mubarak is the Chairman of SPE Digital Energy International Technical Section (DETS), has twenty-eight years of Petroleum Industry, an intelligent field and petroleum engineering consultant at Saudi Aramco, and lead several important teams including the strategic team managing the world's largest intelligent fields in Saudi Aramco. He obtained the 2009 SPE Regional Management and Information award, 2012 Worldoil Innovative Thinker award, 2013 Saudi King's award for innovation and the 2014 SPE international award for management and information. He also earned the 2011/2012 SPE Saudi Section "Community Service Award" for his contribution to Social programs, and a finalist in 2016 WorldOil Lifetime Achievement award, the international 2019 SPE Distinguished Service Award, and the 2019 SPE Distinguished member award. He is a recognized as a thought provoking author

who has published tens of articles to promote innovation and challenge conventional wisdom within & beyond the digital energy and intelligent field including a book titles: “Any Version of History is just a Story”.

Presentation title: Strategies Accelerating Progress of Digital Oil Fields

Presentation Summary: Pioneers are exploring venues to create adaptive business environments capable of integrating this technological change into their strategies and business value architecture. Continued improvisation of implementation methods can result in the perception that DOF is just very uncertain and wasteful to warrant significant time, attention, and resources. This presentation describes a more ordered and disciplined implementation methods that may be used to facilitate tangible DOF progress facilitating the management of assets more intelligently. This presentation also undertakes the mission of uncovering various strategies and technologies for leveraging knowledge, experience, and decision making that could accelerate the progress of DOF implementation. Some of the content is based on actual survey results, on field observations, and on rational speculation about future trends and advances in DOF technologies and their implementation.

3. Keynote speaker: Dr. Zhangxing (John) Chen

Introduction: Dr. Zhangxing (John) Chen, is member of The Academy of Science of the Royal Society of Canada, Academicians of Canadian Academy of Engineering, Professor in the Department of Chemical and Petroleum Engineering, University of Calgary. He is old friend of Chang 'an University, and took part in the 4th Digital Oil Field International Academic Conference.

Presentation title: Machine Learning Applied in Petroleum Industry and Case Study

Presentation Summary: Machine learning as a method of artificial intelligence, its efficient computing power and powerful prediction function has received wide attentions in recent years, and has been widely used in all aspects of life: such as natural language processing, financial industry, engineering, and so on. Many traditional methods in oil industry have their limitations, for example, it takes a lot of time and manpower to interpret logging curves and identify water

layers in oil layers, not only it is expensive and slow to predict oil and gas production by numerical simulation, but also many parameters of modeling can be not obtained. In recent years, machine learning makes debut in the field of petroleum, and it shows excelled performance in lithology prediction, directional drilling, production prediction and so on. This presentation describes a systematic machine learning approach which is applied in different aspects of the oil industry, including oil and gas reservoir type automatic identification, oil and gas yield forecast, oil and gas reservoir numerical simulation software efficiency and speed improvement, hydraulic fracturing-induced earthquake prediction.

4. Keynote speaker: Dr. Robello Samuel

Introduction: Dr. Robello Samuel is currently Senior Technology Fellow at Halliburton with 34+ years of experience and is regarded as one of the world's most influential contributors to advancement of research and practice in drilling engineering leveraging AI, data sciences and advanced analytics to overcome drilling automation and optimization challenges. He is a SPE Distinguished Lecturer, Distinguished member, SPE Gulf Coast and SPE international Drilling Engineering award winner.

Presentation title: At the Edge of Cloud: What does the future look like for cyber physical drilling system (CPDS)?

Presentation Summary: The digital transformation is providing impetus in the advancements in the oil and gas industry. Technological advancements is exposing through time, the bifurcation points provide the fusion of new technologies during the industry contraction mode, which translates the environment similar to the industrial revolution. As the industry moves toward automated drilling systems, not only comprehensive 360° engineering optimization has become very critical, but also the fusion of data analytics at the edge into the system has become increasingly essential. Cyber-physical drilling system (CPDS) integrate cyber capabilities (computation, communication, and control) with physical capabilities (systems governed by the laws of physics and operating in continuous time and other physical processes). Both are tightly coupled and engineered to enhance performance at all disciplines of petroleum engineering. Even though the technologies behind cloud computing existed before the present

computing power, communication with the sensors, cost per computation, fault-tolerant computation in real time, and web services provide elastic support and scalability to visualize and take actions in near real time.

5. keynote speaker: Sakthi Norton

Introduction: Sakthi Norton, Delivery Manager at CDA, OGUK (Oil and Gas Authority, UK). She leads stakeholder engagement and projects on data and digital education, including industry collaborations with international universities. She also manages the UK National Data Repository service, operated by CDA on behalf of the Oil and Gas Authority. CDA is a subsidiary of OGUK, the leading representative body for the UK offshore oil and gas industry, and is active in promoting data and digital, and the broader data professions within the industry.

Presentation title: UKCS – Steps Towards a Digitalised Basin

Presentation Summary: The oil and gas sector in the UK has invested billions of dollars in IT but still lags behind most other sectors in its use of its data and digital maturity. Why is this? What is getting in the way of the basin's digital ambitions? What do we have to do to make progress towards a fully digitalised oil and gas sector? Sakthi Norton will share some insights from a recent cross-industry study, and suggest some ideas for the way forward.

6. Keynote speaker: Dr. Antony Roland Edwards

Introduction: Dr. Antony Roland Edwards, CEO at StepChange Global Consultancy, Expert advisor and program manager for Digital Oilfields, Intelligent Field, Integrated Operations and Collaborative working in the Oil and Gas industry. Highly Experienced Asset and Operations Manager in the North Sea and Internationally.

Presentation title: Lessons Learned from the Practical Application of Remote Operations and Minimum Manning

Presentation Summary: The first wave of 'Digital Oilfield Technologies' are now a reality in many operating companies. The cost to transmit, store and visualise operational data and information remotely in real time has dropped considerably. The first wave of technologies are

rapidly being followed by Analytics, IOT, Digital Twins and the ability to collaborate anywhere and any time. So now that we have the comm's and the all the data and analysis that goes with it what are the implications for our organizational models in upstream oil and gas? This presentation will present the lessons learned from emerging operational models that are based on the latest technologies. Examples will be given of operations in Oil & Gas and Mining that are pushing the boundaries of these models and driving down OPEX and CAPEX and improving production availability, reliability and safety.

7. Keynote speaker: Dr. Hongjie Duan

Introduction: Dr. Hongjie Duan, Senior engineer, director of information management center at SINOPEC Shengli oilfield. He worked in information management for a long time, and has participated in the compilation of the "10th Five-year Plan" on oilfield information, organized and built Oilfield Production Command System, video integration platform, infrastructure cloud, exploration and development integration service cloud, data center, network and information security system, these good results have been achieved in supporting the reform of oilfield specialization and high-quality development. He has also participated in the completion of two National 863 Projects, obtained 4 national invention patents, and undertook the compilation, popularization and application on "Sinopec Exploration and Development Data Model Series Standards", which won the third prize for scientific and technological progress in SINOPEC, especially he has participated in the construction of the cooperation and innovation platform on blockchain of China central enterprises and served as vice-president, he has been awarded the "11th five-year" informatization advanced individual of SINOPEC, the outstanding achievement award of informatization in Chinese energy enterprises, the Innovation Award of informatization management in Chinese energy enterprises and the outstanding post-doctor of Shengli Oil Field.

Presentation title: Digital empowerment, intelligent enhancement -- Thinking on Shengli Oil Field's digital transformation

Presentation Summary: Combined with the core business practice of oil field exploration and development, the report analyzes the bottleneck of data governance and service that needs to be

broken urgently in the oil field data transformation ,how the digital transformation of business can flexibly adapt to the needs of enterprise reform and development, how to carry out digital transformation in informatization. The cut-in point of deep integration of digitalization and oilfield business is put forward, and the transformation scenario of digitalization of oilfield business is defined, which supports the sustainable high-quality development of oilfield enterprises. The report also introduces the achievements and directions of Shengli Oil Field's digital transformation, including: (1) building the production Internet of things to promote the digital transformation of oil and gas production; realizing reservoir modeling to promote the digital transformation of comprehensive research; We will push forward the digital transformation of operation and management, build a cloud service model and promote the digital transformation of information itself. (2) building intelligent exploration and development capabilities, so as to realize the digital transformation of exploration and development; developing the capability to create value, and support the construction of oil field company system and mechanism; Improving the ability to integrate production and operation, so as to achieve operation coverage of all businesses;

We will enhance the capacity for safety and environmental protection to support the development of green enterprises, improve the capacity for innovation-driven development, and build a new ecology in the information age.

8. Keynote speaker: Yuqing Lu

Introduction: Yuqing Lu, Deputy director of information management center at SINOPEC Shengli oilfield. He leaded the construction of “the four industrializations” and all the matters of oil and gas production information system, including development status, the overall structure, system composition and standard construction. He promotes the deep integration of information and oil field production for supporting the transformation and sustainable development of oil fields, which establish a modern development model of oilfield company with Shengli Oil Field Characteristics.

Presentation title: Research and Practice of Industrial Brain based on Real-time Production Data in Shengli Oil Field

Presentation Summary: Shengli Oilfield Production Real-time Data Industrial Brain is building a

regional-level real-time data middle platform that manage data, models and algorithms in a unified way, and then a suggested control strategy is calculated and worked out by real-time data driven model. This presentation analyzes the current situation of Oilfield Production Informatization which completes the design of real-time data middle platform according to the actual situation of production. The production real-time data middle platform provides the reference data for oilfield intelligent construction with shortening the data link and providing high performance computing, setting the mission of that deepen applicants real time data, high-level intermodulation of industrial control, and promoting the comprehensive enhance throughout real-time production data acquisition, storage, application, and management chain.

9. Keynote speaker: Wei WANG

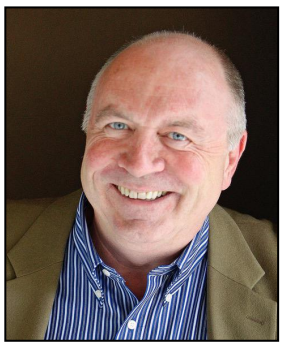
Introduction: Wei WANG, Deputy chief engineer of technology Center at CNPC Logging Co., LTD. Since 2002, he was project leader or principal for more than 10 times, for examples, “high-speed cable transmission” , “small diameter conventional logging tools for HPHT (high-temperature high-pressure)” and soon on. In the past two years, he was executive leader in these research subjects “175℃/140MPA imaging logging equipment field test” and “230℃ HPHT logging system development”. He has technical expertise in high speed cable transmission and HPHT instruments, so that he was awarded first prize and second prize respectively for scientific and technological progress of China National Petroleum Corporation, and also won the special prize and first prize many times for scientific and technological progress in the well logging company's. Three times advanced workers he was granted awards by CNPC Logging Co., LTD, respectively for 2003, 2012, and 2013, as well as 2018 model workers.

Presentation title: CPLog Remote Intelligent Formation Imaging Logging System

Presentation Summary: CNPC Logging Co., LTD has successfully developed its own intellectual property EILog which is fast and imaging logging equipment, this ended China long-term dependence history on importing of advanced logging equipment from abroad, and also promoted over 21,000 kinds of instruments to markets, not only China’s demands were met but also 6 overseas countries exported to. The CPLog system is an upgraded, unified, independent, brand product of CNPC Logging Co., Ltd. This presentation mainly covers the contents of the system,

consist of surface, formation imaging and remote logging, it mentioned the indicator, function, characteristic, key technology and application effect.

10. Keynote speaker: Philip Neri



Introduction: Philip Neri is currently Marketing and Communications Manager for Energistics. Philip brings over 30 years of geoscience, data management and marketing experience including 10 years at Paradigm and more recently 4 years at Ikon Science. His primary role is to communicate the Energistics brand to the stakeholder community and support the industry's uptake of the Energistics collaboration standards. His experience with both energy companies and software vendors, added to market research activities, allows him to communicate the value of data integration to a diverse audience. He is well aware of new trends in big data, machine learning and IoT, notably with his work with start-ups at the Houston Technology Center. Philip holds a B.Sc. in Geology and an M.Sc. in Geophysics, has worked for oil majors Shell and Total, service companies Schlumberger and CGG, as well as in much smaller software technology companies in Europe and the USA, and start-ups in Machine Learning, marine acquisition technology and exhibit management; he is a member of SEG, EAGE and SPE.

Presentation title: Energistics Industry-Defined Data Standards and Data Transfer Protocols are Essential to Cross-Discipline Digital Transformation

Presentation Summary: The presentation included brief of Energitstics, the role in the industry and international standards, the usage of these standards in the industry (WITSML, PRODML, RESQML, ETP,..), OSDU and what Energitstics's contribution for the forum.

11. Keynote speaker: Tiecheng Wang

Introduction: Tiecheng Wang, Senior engineer, Senior technical director of CNPC RICHFIT, he mainly worked in the petroleum industry for information engineering technology research and management.

Presentation title: E&P Dream Cloud Platform-boosting the digital transformation and intelligent development of oil and gas industry

Presentation Summary: E&P Dream Cloud Platform is a platform in oil and gas industry to integrate scientific research, production, management and decision-making and

intelligently support opened technology ecology and software. It provides AI-based data lake services to intelligent oil and gas field, which including data integration, storage, governance, analysis, sharing, so that intelligent analytical applicants of oil and gas data is realized, the establishment of the oil and gas industry opened data ecology is supported, multi-dimensional cloud platform services is provided for giving the supports to application development, application integration, professional software sharing, mobile applications, intelligent innovation, ecological operation and business collaboration, and multidisciplinary collaborative research work-flow services is supplied, as well as the data sharing, achievement inheritance of multidisciplinary, across basins, across oil and cloudy management and integration applicant of professional software were ensured. This platform is pioneered in the China oil industry to provide a self-service open ecological environment for exploration and development business users and application developers, supporting enterprises and partners to "co-build, share and integrate, " and also construct the new ecology of exploration and development business application. The platform based on dream cloud, build up the digital applications of oil and gas upstream , middle and downstream business quickly, such as exploration and development, pipeline, refining and sales, and also open up the digitalization of oil and gas full service chain and full elements, which strengthen the interconnection capability of multiple cloud systems, realize the interconnection of external cloud resources and dream cloud, promote digital and intelligent transformation from the traditional oil and gas industry.