Energy Researchers Ariana

There is no Energy in Matter other than Environmental Energy

CONTENT

ABOUT US

ENERGY RESEARCHERS ARIANA

Company overview

Energy Researchers Ariana (ERA) provides oilfield and mining services delivering solutions and expertise to national, international and independent organizations. Since its founding in Ahvaz, Iran in 2014, ERA has developed constructive and cost-effective alternative solutions to complex and expensive exploration, production and environmental problems. Petroleum exploration using surface geochemical techniques (e.g. MPOG and soil gas) had been conducted by ERA for the first time in Iran. In addition, ERA provides the advanced services in the fields of organic/petroleum geochemistry, basin modeling and petroleum system analysis, remote sensing (RS) and geographic information systems (GIS), environmental evaluation of organic pollutants, and mineral resources characterization. By utilizing these services, the risk associated with exploration of natural resources is significantly reduced, and the corresponding environmental impacts would be controlled.

(R&D)

RESEARCH AND DEVELOPMENT

Right from the start, Energy Researchers Ariana (ERA) Company has collaborated with numerous national and international research institutions and universities, which has led to innovative solutions that have had a major impact on the development of geochemical exploratory techniques (especially surface geochemistry) in Iran. After conducting the first surface geochemical exploration project in Iran, we are now looking ahead to future problems. This would not have been possible without innovative ideas and solutions that have been of great significance for the company's business. Our staff in Research & Development unit are the cornerstone of ERA›s innovation and a key element in developing the new exploratory techniques. At ERA, innovation is essential for cost-effective accessing to petroleum and mining resources, which means our professionals have the opportunity to grow in a dynamic environment where their expertise is valued throughout the company. We constantly invest in training and facilities to enable R&D at ERA to be amongst the best in the industry.

"

WHILE CONSOLIDATING OUR POSITION IN IRAN, OUR AMBITION IS CLEAR: WE WANT TO EXPAND OUR PORTFOLIO ON THE MIDDLE EAST AND WORLDWIDE, AND HAVE MORE LEGS TO STAND ON. SO FAR, WE HAVE CONDUCTED MORE THAN 10 RESEARCH PROJECTS IN THE FIELDS OF PETROLEUM EXPLORATION SERVICES, MOST OF WHICH ARE CARRIED OUT BY CONTRIBUTION OF E&P GEO) (FIELD SERVICES COMPANY (FRANCE) AND THE OTHER RESEARCH INSTITUTES, UNIVERSITIES, AND COMPANIES IN IRAN AND WORLDWIDE.

(HSE)

HEALTH, SAFETY, AND THE ENVIRONMENT (HSE)

Safety is highest priority at Energy Researchers Ariana (ERA), and the foundation on which our success is built. ERA has a consistent HSE commitment to the highest standards for the health and safety of our employees, customers, and contractors as well as to the protection of the environment in the communities in which we live and work. The HSE unit of ERA defines the principles by which we conduct our operations in Iran and other countries with regards to health, safety, and the environment. This unit communicates the ERA HSE philosophy to all employees, customers, contractors, and third parties associated with our business. Our vision at ERA is to ensure we meet or exceed all health, safety and environmental (HSE) expectations of our clients and strive to improve our HSE performance on a continuous basis. We believe it is our social responsibility, as a pioneer company, to demonstrate our policy by promoting specific HSE activities. With unyielding determination to grow into a company worthy of admiration, we will continue to press forward with our HSE activities.

THE CHALLENGES

EXPLORATION

- Identifying stratigraphic traps in prospective basins.
- Ambiguity and complexity for costly seismic surveying in a large structure.
- Applying environmentally friendly techniques for petroleum exploration.
- Significant reduction of petroleum exploration risk.
- Identifying genetic relationships between reservoir oils and source rocks.

DEVELOPMENT

- Monitoring hydrocarbon migration pathways during enhanced oil recovery (EOR).
- Identifying genetic relationships between reservoir oils and source rocks.
- Evaluation of reservoir continuity.
- Recognition of productive or drained reservoir compartments.
- Occurrence and extent of tar formations.
- Characterization of commingled.

ENVIRONMENTAL

- Applying environmentally friendly techniques for petroleum exploration.
- Characterizing the source of organic pollutants in environment.
- Identifying migration and dispersion of organic pollutants in environment.

UNCONVENTIONAL

- Characterizing the experienced thermal maturity (e.g. oil shale, shale oil, CBM, and gas shale).
- Identifying organic richness and type of generated HCs.
- Deciphering lithological properties.
- Stratigraphic interpretation and correlation.

SERVICES AND PROCUCTS

1- **SURFACE GEOCHEMICAL SURVEY**
2- **PETROLEUM GEOCHEMICAL STUDY**
3- **MINERAL RESOURCES EVALUATION**
4- **BASIN MODELING AND PETROLEUM SYSTEM ANALYSIS**
5- **REMOTE SENSING AND GIS**
6- **ENVIRONMENTAL STUDY**
7- **DRILLING PARAMETERS**

SURFACE GEOCHEMICAL SURVEY SERVICE

Many types of geochemical methods have become useful and successful tools for petroleum exploration. Surface geochemical techniques, in particular, have been used with success since the 1930s. The science of geochemistry, in general, has matured considerably since the 1930s and especially in the 1980s. This has been the result of better analytical equipment and techniques, a long history of successful application of exploration (surface) geochemistry in the mining industry, development of sophisticated statistical techniques, and a greater understanding of soil and subsurface conditions and processes. A wide variety of techniques in petroleum exploration have been grouped into a general category called unconventional methods; surface geochemistry is classified as one of them. Surface geochemistry is composed of several techniques that detect chemical and biological changes caused by hydrocarbon leakage from the reservoirs to the surface, particularly in the near-surface soil, atmosphere or in the ocean environment.

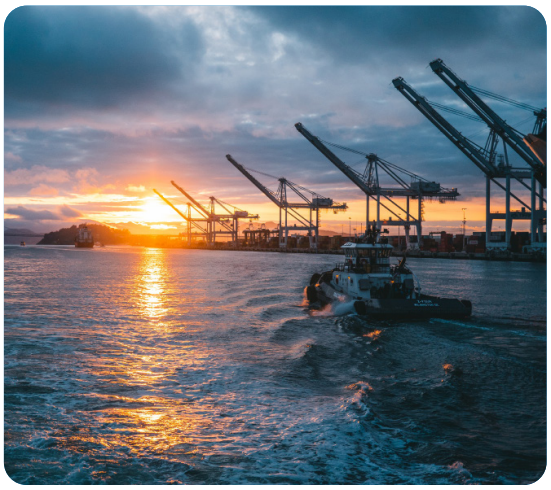
SERVICES AND PROCUCTS

PETROLEUM GEOCHMICAL

Petroleum geochemistry is the fruit of questions about the origin of hydrocarbons, and for the time being, its development has been closely linked to that of petroleum exploration. It is a young science, most of it having been acquired in less than 40 years. However, petroleum geochemistry nowadays plays an important role in the exploration and production of oil, and of fossil fuels in general. The single most significant contribution of petroleum geochemistry to exploration efficiency is that it can be used to show genetic relationships among crude oils and source rocks.

MINERAL RESOURCES EVALUATION

A mineral resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade (or quality), and quantity that there are reasonable prospects for eventual economic extraction. Mineral resources have been exploited by human beings for thousands of years to obtain precious metals for their use and economic value. A mineral resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade (or quality), and quantity that there are reasonable prospects for eventual economic extraction. Mineral resources have been exploited by human beings for thousands of years to obtain precious metals for their use and economic value.



BASIN MODELING AND PETROLEUM SYSTEM

The best way to reduce investment risk in oil and gas exploration is to ascertain the presence, types and volumes of hydrocarbons in a prospective structure before drilling. Seismic interpretation can delineate closed structures and identify potential subsurface traps, but it does not reliably predict trap content. Drilling on a closed structure, even near a producing oil or gas field, holds no guarantee that similar fluids will be found. Therefore, profitable exploration requires a methodology to predict the likelihood of success given the available data and associated uncertainties. Generally, the success of any exploration campaign depends on the convergence of crucial geologic elements (effective source, reservoir, seal and overburden rocks) and processes (hydrocarbon generation, migration and accumulation), defining in a framework which is called petroleum system. The elements and processes must occur in the proper order for the organic matter in a source rock to be converted into petroleum and then to be stored and preserved.

SERVICES AND PROCUCTS

ENVIRONMENTAL STUDY

Exploration and exploitation of oil and gas reserves have not always been without some environmental effect. A major concern in environmental studies is the estimation of the impact of anthropogenic activities on natural systems. Organic compounds are among the more abundant and the more various pollutants. Because they can display significant adsorption capacities and thus transport other pollutants, they should be carefully analyzed. In recent years, a variety of the advanced organic geochemical techniques have been developed to improve knowledge of the structure and evolution of natural organic matter. Most of the advanced techniques that are required for the characterization of organic compounds can be directly used in environmental studies.

REMOTE SENSING AND GIS

The most established market in remote sensing (RS) is in the area of natural resources for exploration of oil, gas, and minerals. Remote Sensing technology aids in the selection and development of oil and gas exploration areas around the World as well as in the areas of oil spill mitigation and remediation. Through geological and geophysical seismic interpretation and use of orthorectified satellite images, it provides insight on the selection of areas to plan 2D or 3D seismic surveys as well as aiding in the process of environmental and operational safety hazards to minimize the HSE risks. In addition, many specialists will agree that geographic information systems (GIS) particularly in the context of petroleum exploration and development - is one of those technologies that is hard to get one›s arms around.

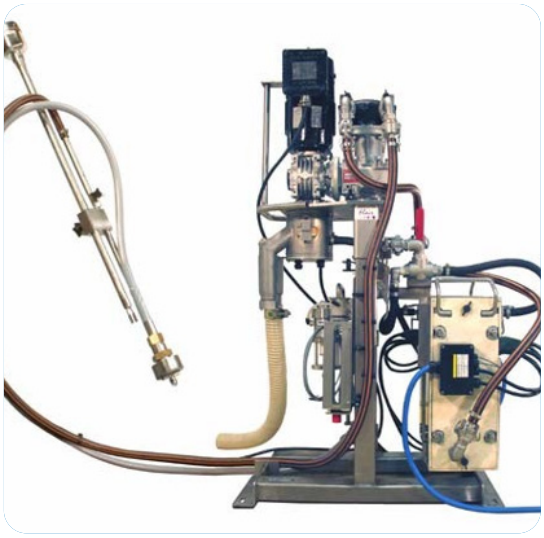
DRILLING PARAMETERS SERVICE

1- AUTO CALCIEMETER
2- CVD-CVE EQUIPMENT
3- FLOW PADDLE

SERVICES AND PROCUCTS

AUTO CALCIEMETER

Many special tests are run on rock samples to make on-the-spot determination of specific minerals. These tests vary from applying such standard chemicals as alizarin red for calcite detection to calcimetery for quantitative determination of carbonate content. Generally, the calcimetery test relies on the reaction of calcium carbonate with hydrochloric acid (HCl) for determining the amount of CaCO3 (calcite) and CaMg (Co3)2 (dolomite) in alkaline carbonate samples such as oil well cores or drill cuttings. Using the automatic calcimeter developed by Energy Researchers Ariana (ERA) Company, the powdered core/ cutting samples containing carbonate matrix are reacted with 1 Normal HCl in a sealed reaction cell to release CO2 .



CVD-CVE EQUIPMENT

While drilling through a reservoir, a lot of valuable information can be obtained from mud logging to support formation evaluation. Formation gas is considered as the first indication of a reservoir's fluid characterization and reflects the extent of the productivity of the well. Geochemical ratios and equations can enhance the interpretation of field data and give the first indication of zones of interest that need further evaluation. The integration of the gas data along with the drilling parameters (ROP, ΔFlow) and geochemical features provide valuable information to quantify the rock properties such as porosity, permeability and identification of fractures while drilling. Since most of reservoirs display specific geochemical signatures in terms of types and quantities of hydrocarbon components and ratios between them, high quality gas data obtained from gas chromatography (GC) is potentially useful for reservoir evaluation and characterization.

FLOW PADDLE

Safety during drilling operations becomes a more and more important factor in today's oil and gas industry. Especially after the tragic Deepwater Horizon accident, attention towards the safety in oil and gas industry has substantially increased. In order to avoid such worst-case scenarios, drilling companies face many challenges and, in most cases, invest heavily in advanced well control and kick detection systems as well as other preventative measures. Especially due to the increased complexity and harshness of the drilling environments maintaining, a smooth and safe operation becomes more difficult. Conventional kick detection systems are often not up for the task and leave little time for the drilling crew to decide and react to well control events. A flow paddle sensor is nowadays one of the most commonly used indicators on conventional drilling rigs to detect such events.

OUR COLLEAGUES

So far, ERA has cooperated with several organizations Iranwide including:

National Iranian South Oil Company (NISOC), Iran	Exploration Directorate of National Iranian Oil Company (EXPNIOC), Iran
National Iranian Oil Company (NIOC), Iran	Shahid Chamran University of Ahvaz (SCU), Iran
Arvandan Oil and Gas Company (AOGC), Iran	Khuzestan Science and Technology Park (KHSTP), Iran
Khuzestan government office, Iran	Jahad Agriculture organization of Khuzestan, Iran

OUR JOINT VENTURES

So far, ERA has cooperated with several organizations worldwide including:

E&P)(Field Services	E&P Geo)(Field Services, France
Global Conventional and Unconventional Geochemistry (GCUG), USA	
MONTAN UNIVERSITÄT LEOBEN	University of Leoben, Austria
China University of Geosciences (Beijing), China	

COMPANY PROJECTS

Exploration, exploitation, production and management of hydrocarbon reservoirs.

01 | Biological prospecting by microbial and geobotanical methods. National Iranian Oil Company (NIOC), 2021 to present.
02 | Comparative study of geochemistry in oil and gas industry›s value chain. National Iranian Oil Company (NIOC), 2020 to present.
03 | (Sampling operation and…) and surface geochemical studies in sedimentary basins of Iran including exploration targets of Dezful, Lurestan and Kopeh-Dagh. Exploration Directorate of National Iranian Oil Company (EXP-NIOC), 2019 to present.
04 | Development of new geochemical exploration technologies with respect to surface and subsurface geochemistry in Abadan Plain region. National Iranian Oil Company (NIOC), 2018 to present.
05 | Surface geochemical study of Gisakan structure. Exploration Directorate of National Iranian Oil Company (EXP-NIOC), 2017.
06 | Genes expression level used to evaluate volatile hydrocarbon degradation for quantitative and qualitative oil and gas survey in the Charak structure, Iran. Exploration Directorate of National Iranian Oil Company (EXP-NIOC), 2017.
07 | Evaluation and geochemical modelling of source rock as well as hydrocarbon present in different reservoir of Abadan Plain, NW persian Gulf. Exploration Directorate of National Iranian Oil Company (EXP-NIOC), 2014.
08 | Geochemical investigation of well No ۲ in Kish oilfield. Exploration Directorate of National Iranian Oil Company (EXP-NIOC), 2012.
09 | Effect of gas injection on geochemical parameters of Asmari reservoir in Ghale Nar oilfield. Shahid Chamran University of Ahvaz (SCU), 2012.
10 | Comparing the Asmari reservoir hyrdrocarbons and Kazhdumi shales as a possible source rock. Shahid Chamran University of Ahvaz (SCU), 2010.
11 | Geochemical study of Bangestan reservoir in Marun oilfield. National Iranian South Oil Company (NISOC), 2009.
12 | Geochemical investigation of hydrogen sulfide oil pollution source in Bangestan reservoir of Marun oilfielf. National Iranian South Oil Company (NISOC), 2005.
13 | Determination of physical oceanographic parameters in Asalooyeh area. Water Research Center, 2001.
14 Effect of disposal water from oil recovery units to near by environment. National Iranian South Oil Company (NISOC), 2000.
15 | Measurement of the physical parameters in the Persian Gulf waters. Atmospheric and Meteorological Organization of Iran, 2000.
16 | Pollution and the source of pollutants of inland waters in Boushehr Province. Environment Organization of Boushehr Province, 1995.

COMPANY PROJECTS

Exploration and exploitation of mineral

01 | Identifying the hazards of Ahvaz city in the framework of Crisis Atlas. Khuzestan Science and Technology Park (KHSTP), 2021.
02 | The studies of environmental impacts assessment in Abadan Plain. Exploration Directorate of National Iranian Oil Company (EXP-NIOC), 2020.
03 | Geoenvironmental evaluation of dust storm, Khuzestan Province, Phase I. Environmental Protection Organization of Khuzestan Province, 2011.
04 | Geoenvironmental evaluation of dust storm, Khuzestan Province, Phase II. Environmental Protection Organization of Khuzestan Province, 2012.
05 | Exploration of silica sands in Dezful Embayment area, Khuzestan Province. Khuzestan Organization of Industries and Mines, 2007.
06 | Exploration of dimension stones in the Kamestan region, Khuzestan Province. Khuzestan Organization of Industries and Mines, 2007.
07 | Investigating environmetal impacts of hydrocarbon fields on the adjacent springs. Water and Electricity Organization of Khuzestan, 2006.
08 | Geology and geochemistry of Bauxite occurrence in the Kohgiluyeh and Boyer-Ahmad Province. Shahid Chamran University of Ahvaz, 2005.

COMPANY PROJECTS

Spectroscopy, remote sensing, and geographic information systems (GIS).

01 | Assessment of the under-cultivation areas for basic agricultural products in Khuzestan province. Agricultural Jihad Organization of Khuzestan Province, 2020.
02 | Developing a spatial information system for Environmental Protection Administration of Khuzestan Province in the department of human environment using GIS. Shahid Chamran University of Ahvaz, 2008.
03 | Studying the variations and mineralogy of dune sands in west of Ahvaz city using GIS. Shahid Chamran University of Ahvaz, 2007.
04 | The studies to identify water resources of the Gurpi anticline. Water and Electricity Organization of Khuzestan, 2005.
05 | Operation of plotting the UTM points related to the piezometers of Khuzestan plains on the topographic maps (1:25000) in GIS environment. Water and Electricity Organization of Khuzestan, 2004.

Lorestan Province, Koohdasht Region

Ilam Province, Zangvan Region

Misdagh Susangard

Khuzestan Province, Abadan Plain Region

Somaliland

Oman

Khorasan Razavi Province, Kalat Region

Sardasht Dezful

Mansoorabad Behbahan

Kohgiluyeh and Boyer-Ahmad Provinces, Gachsaran Region

Indonesia

Energy Researchers Ariana Company

Contact

Phone: +9861 3333 8083
Mobile: +98 916 791 1571
Fax Number: +9821 2842 9453
E-mail: energyariana@gmail.com
WebSite: www.energyariana.com

Postal address

Ahvaz - Amanieh - West Socrates St. - Khuzestan Science and Technology Park Management Building - Third Floor - Unit 2 - Energy Researchers Ariana Company