

## KISR Patents

**2020**

| No | Title  | Inventor(s)  | Center | Patent Number      | Year |
|----|--|--|--------|--------------------|------|
| 1. | Device and Method for Measuring Effect of Soiling on Photovoltaic Device       | Abdullah Al-Kanderi, Dr. Firas Alzubi, Abdulwahab Al-Asfour,   | EBRC   | US10594258 B1      | 2020 |
| 2. | Device and method for measuring effect of soiling on photovoltaic device       | Abdulwahab Al-Asfour, Abdullah Al-Kanderi, Dr. Firas Al-Zubi   | EBRC   | US10615745 B1      | 2020 |
| 3. | Method for Damping Ocean Waves in Coastal Area                                 | Dr. S. Neelamani & Eng. Noor Alnjari   | ELSRC  | US10550534 B1      | 2020 |
| 4. | Combination Multi-Effect Distillation and Multi-Stage Flash Evaporation System | Dr. Essam El-Syed  | WRC    | KR 10-2019-7023692 | 2020 |
| 5. | Pressure-reduced saline water treatment system                                 | Dr. Mansour Ahmad, Dr. Rajesh Kumar Alambi, Dr. Bhadrachari Garudachari, Dr. Yousef Al-Wazzan & Mr. Jibu P. Thomas | WRC    | KR20200089223 A    | 2020 |
| 6. | Vacuum salt water treatment system   | Dr. Mansour Ahmad, Dr. Rajesh Kumar Alambi, Dr. Bhadrachari Garudachari, Dr. Yousef Al-Wazzan & Mr. Jibu P. Thomas | WRC    | JP2020110795 A     | 2020 |

## KISR Patents

**2019**

| No | Title   | Inventor(s)  | Center | Patent Number  | Year |
|----|---|--|--------|----------------|------|
| 1. | Nanocomposite System for Solid Hydrogen Storage                                 | Dr. M Sherif El-Eskandarany, Eng. Fahad T. Al-Alajmi, and Eng. Mohammad Banyan | EBRC   | US10364148 B1  | 2019 |
| 2. | Method for Synthesizing a Thin Film Stainless Steel Coating                     | Dr. Nasser Al-Sayegh, Dr. Maryam Adnan Saeed, Dr. Feras Al-Zubi                | EBRC   | US 10392690 B1 | 2019 |
| 3. | Device and Method for Measuring Effect of Soiling on Photovoltaic Device        | Dr. Feras Alzubi, Abdullah R. Alkandary, Abdulwahab Al-Asfour                  | EBRC   | US10447201 B1  | 2019 |
| 4. | Method for Doping Magnesium with Nickel by Cold Spray Technique                 | Dr. M Sherif El-Eskandarany, Eng. Mohamed Banyan, Eng. Fahad T. Aljmi          | EBRC   | US10443132 B1  | 2019 |
| 5. | Device and Method for Measuring Effect of Soiling on Photovoltaic Device        | Dr. Firas Alzubi, Abdulwahab Al-Asfour, Abdullah Al-Kanderi                    | EBRC   | US10476431 B1  | 2019 |
| 6. | Pyrolysis Reactor System for the Conversion and Analysis of Organic Solid Waste | Dr. Sultan Al-Salem  | ELSRC  | US10364395 B2  | 2019 |
| 7. | Fatigue Cracking Machine for circumferential Noticed Tensile Specimens          | Dr. Rihan Omar Rihan   | PRC    | US10190967 B1  | 2019 |

| No  | Title   | Inventor(s)  | Center | Patent Number | Year |
|-----|---|--|--------|---------------|------|
| 8.  | System and Method for Pretreating Turbid Seawater                   | Dr. Yousef Al-Wazzan, Mr. Abbas. Al-Mesri, Dr. Mansour Ahmed, Mohammad Al-Tabtabaei                                | WRC    | US10183882 B1 | 2019 |
| 9.  | Desalination System with Mineral Recovery                           | Dr. Bhadrachari Garudachari, Dr. Mansour Ahmed, Dr. Rajesh Kumar Alambi, Mr. Jibu P Thomas                         | WRC    | US10280095 B1 | 2019 |
| 10. | Pressure Reduced Reverse Osmosis Process for Saline Water Treatment | Dr. Mansour Ahmad, Dr. Rajesh Kumar Alambi, Dr. Bhadrachari Garudachari, Dr. Yousef Al-Wazzan & Mr. Jibu P. Thomas | WRC    | US10308524 B1 | 2019 |

## KISR Patents

**2018**

| No | Title   | Inventor(s)   | Center | Patent Number | Year |
|----|---|---|--------|---------------|------|
| 1. | Method of making a nanocomposite polyelectrolyte membrane         | Dr. Shawqui M. Lahalih  | EBRC   | US10153507 B1 | 2018 |
| 2. | Planchet holder for electrodeposition of materials                | Dr. Saiff Udin<br>Ms. Montaha Behabani  | ELSRC  | US9856573 B2  | 2018 |
| 3. | Hydrodemetallization Catalysis                                    | Dr. Mohan S. Rana and Dr. Faisal Alhumaidan   | PRC    | US9861972 B1  | 2018 |
| 4. | Catalysis for Mild Hydrocracking of Residue Oil                   | Dr. Mohan S. Rana, Dr. Meena Marafi, Dr. Faisal Alhumaidan & Eng. Khalidah Al-Dalama  | PRC    | US9919293 B2  | 2018 |
| 5. | Nanosized Sulfide Catalysts for Conversion of Heavy Oil Fractions | Dr. Andres Perez  | PRC    | US9993808 B1  | 2018 |
| 6. | Thin Film Nanocomposite Nanofiltration Membrane                   | Dr. Rajesha Kumar, Dr. Mansour Ahmed, Dr. Garudachari Bhadrachari, Mr. Jibu P. Thomas | WRC    | US10124297 B1 | 2018 |
| 7. | Integrated Reverse Osmosis/Pressure Retarded Osmosis System       | Dr. Essam El-Syed   | WRC    | US9895663 B2  | 2018 |

## KISR Patents

**2017**

| No | Title  | Inventor(s)   | Center | Patent Number | Year |
|----|--|---|--------|---------------|------|
| 1. | Method of synthesizing mgh <sub>2</sub> /ni nanocomposites | El-eskandarany, Mohamed Sherif<br>Mohamed Mostafa<br>Shaaban, Ehab Abdelhaleem<br>Abdelmotalb<br>Ali, Naser Mustafa Abdul Nabi<br>Aldakheel, Fahad Ahmed Jasem<br>Mohamed<br>Alkandary, Abdullah Ramadhan<br>Abdullah | EBRC   | US9828245 B1  | 2017 |
| 2. | Composition for hydrogen storage                           | Mohamed Sherif Mohamed Mostafa<br>El-eskandarany,   | EBRC   | US9533884 B1  | 2017 |
| 3. | Method for synthesizing nanodiamonds                       | Mohamed Sherif Mohamed Mostafa<br>El-eskandarany,   | EBRC   | US9540245 B1  | 2017 |
| 4. | Metallic glassy alloy powders for antibacterial coating    | Mohamed Sherif Mohamed Mostafa<br>El-eskandarany,<br>Ahmed Salem Abdulhadi Aldamier<br>Al-azmi,   | EBRC   | US9609874 B1  | 2017 |
| 5. | Seawater surface sampling device                           | Saif Uddin,<br>Montaha Behbahani,   | ELSRC  | US9541474 B1  | 2017 |

| No  | Title  | Inventor(s)                                | Center | Patent Number | Year |
|-----|--|--|--------|---------------|------|
| 6.  | Hydrodemetallization catalysts   | Rana, Mohan Singh<br>Alhumaidan, Faisal S. | PRC    | US9861972 B1  | 2017 |
| 7.  | Method for preparing nanosized sulfide catalysts                               | Quesada Perez, Andres Miguel               | PRC    | US9993808 B1  | 2017 |
| 8.  | System for measuring glass transition temperature of a polymer                 | Salah Al-Enezi                             | PRC    | US9702837 B2  | 2017 |
| 9.  | System for testing stress corrosion cracking                                   | Rihan Omar Yousef Rihan,                   | PRC    | US9541485 B1  | 2017 |
| 10. | Bore hole tracer injection apparatus   | Khaled Al-Fahad                            | WRC    | US 9784061 B2 | 2017 |
| 11. | Combination multi-effect distillation and multi-stage flash evaporation system | Essam El-din Farag El-sayed,               | WRC    | US9539522 B1  | 2017 |

## KISR Patents

**2016**

| No | Title   | Inventor(s)   | Center | Patent Number | Year |
|----|---|---|--------|---------------|------|
| 1. | Process using multiple waste streams to manufacture synthetic lightweight aggregate | Suad Al-bahar,<br>Saud Al-otaibi,<br>Sharifa Al-fadala,<br>Ali Abduljaleel,<br>Mahmoud Fawzy Taha,<br>Fatma Al-fahad,<br>Amer Al-arbeid,<br>Tarun K. Mukherjee, | EBRC   | US9340456 B2  | 2016 |
| 2. | Fluid expansion engine  | Mane Alsudairawi,   | ELSRC  | US9267462 B1  | 2016 |
| 3. | Floating breakwater   | Subramaniam Neelamani,<br>Khaled Al-banaa,  | ELSRC  | US9340940 B2  | 2016 |
| 4. | Method of dissipating water wave energy   | Subramaniam Neelamani,<br>Altaf Taqi,<br>Khaled Al-salem,   | ELSRC  | US9447554 B1  | 2016 |
| 5. | Gelling agent for water shut-off in oil and gas wells<br>(Divisional)               | Lahalih, Shawqui M  | PRC    | US9518208 B2  | 2016 |

## KISR Patents

**2000-2015**

| No | Title   | Inventor(s)   | Center | Patent Number | Year |
|----|---|---|--------|---------------|------|
| 1. | Gelling agent for water shut-off in oil and gas wells   | Lahalih, Shawqui M  | PRC    | US9074125 B1  | 2015 |
| 2. | Nanocomposite mixed-matrix membrane   | Shawqui M Lahalih,  | WRC    | US9073014 B1  | 2015 |
| 3. | Bivalent vaccine for marine fish and method for making the same   | Azad Ismail Saheb,<br>Ahmed Al-marzouk,                   | ELSRC  | US8758774 B2  | 2014 |
| 4. | process for recovering boehmite and $\gamma$ - $\text{Al}_2\text{O}_3$ from spent hydroprocessing catalysts             | Meena Marafi,   | PRC    | US8282897 B2  | 2012 |
| 5. | Method or process for recovering mo, v, ni, co and al from spent catalysts using ultrasonic assisted leaching with edta | Meena Marafi,   | PRC    | US8287618 B2  | 2012 |
| 6. | Pressure exchange apparatus   | Essam El-sayed,<br>Mahmoud Abdel-jawad,<br>Ali Al-odwani, | WRC    | US7661932 B2  | 2010 |
| 7. | Cooling tower and method for optimizing use of water and electricity  | Gopal P Maheshwari,<br>Eitidal Al-bassam,                 | EBRC   | US6446941 B1  | 2002 |



## KISR Patents

1990 - 1999

| No | Title   | Inventor(s)   | Center | Patent Number | Year |
|----|---|---|--------|---------------|------|
| 1. | Process and microorganisms for producing single cell protein                                  | Ibrahim Y Hamdan,<br>Amin S Elnawawy,<br>Ibrahim M Banat,<br>Nader M Al-awadhi, | ELSRC  | US5314820 A   | 1994 |
| 2. | Process for making high-strength alumina substrates and catalysts and products made therefrom | Ma Mum A Halabi,<br>Anthony Stanislaus,<br>Huda Al-zaid,                        | PRC    | US5217940 A   | 1993 |
| 3. | Anionic polymer hydrogels and a process for making the same                                   | Shawqui Lahalih,<br>George Hovakeemian,   | PRC    | US4898908 A   | 1990 |

## KISR Patents

**1979 - 1989**

| No | Title   | Inventor(s)   | Center | Patent Number | Year |
|----|---|---|--------|---------------|------|
| 1. | Utilization of melamine waste effluent  | Shawqui Lahalih,<br>Ma Mun Absi-halabi,   | PRC    | US4663387 A   | 1989 |
| 2. | Highly stable sulfonated melamine-formaldehyde condensate solution  | Shawqui Lahalih,<br>Ma Mun Absi-halabi,   | PRC    | US4820766 A   | 1989 |
| 3. | Stable mud drilling fluid additive, composition and process for making the same   | Shawqui Lahalih,<br>Ma Mun Absi-halabi,<br>Issam Dairanieh,                           | PRC    | US4839095 A   | 1989 |
| 4. | Multilayer degradable and controlled release multinutrient mulch film, and process for preparing same                                   | Shawqui M Lahalin,<br>Saed-el-deen Akashah,<br><br>Farouk and Al-hajjar               | PRC    | US4845888 A   | 1989 |
| 5. | Method for improving the mechanical properties of soil, a polymeric solution therefore, and a process for preparing polymeric solutions | Shawqui Lahalih,<br>Ma Mun Absi-halabi,<br>Nouria Al-awadhi, and<br>Khamis Shuhaibar, | PRC    | US4793741 A   | 1988 |
| 6. | Process for the synthesis of highly stable sulfonated melamine-formaldehyde condensates as superplasticizing admixtures in concrete     | Shawqui Lahalih<br>MaMun Absi-Halabi  | PRC    | US4677159 A   | 1987 |
| 7. | Utilization of melamine waste effluent  | Shawqui Lahalih<br>MaMun Absi-Halabi  | PRC    | US4797433 A   | 1987 |

| No  | Title   | Inventor(s)  | Center | Patent Number                                 | Year   |
|-----|---|--|--------|---|--|
| 8.  | Degradable agricultural plastic articles, e.g., mulching film, comprising slowly released multinutrients in matrix of thermoplastic, and process for preparing same | Saed-el-deen Akashah, Shawqui M Lahalin, Farouk and Al-hajjar    | PRC    | US4686790 A                                   | US<br>1987<br>Spain<br>1988<br>Japan<br>1988 |
| 9.  | Process for purification of liquid paraffins  | Fathi A. Owaysi<br>Rasheed S. Al-Ameeri                          | PRC    | EP0164905B1<br>CA1256385 A                    | 1986-<br>1989                                |
| 10. | A replacement film mulch coverage and method of manufacture   | Akashah, Saed-el-deen<br>Lahalih, Shawqui M<br>Al-hajjar, Farouk | PRC    | ES2000221 A6                                  | 1986   |
| 11. | Purification of liquid paraffins  | Owaysi, Fathi Abdelwahhab<br>Al-ameeri, Rasheed Salim            | PRC    | DE3567477 D1<br>US4567315 A                   | 1985<br>1984                                 |
| 12. | Method and system for 5-bit encoding of complete arabic - farsi languages   | Khaled Mahmud Diab   | STS    | <b>US 4298773 A</b><br>JO1108 B<br>IN154866 B | 1981<br>1982<br>1985-                        |
| 13. | Production of the 60-70 bitumen from vacuum residue without the use of air or any external agent except the proper stirring   | Yusuf Ahmad Al-Farkh and Adnan<br>Mohammed Abushihada            | PRC    | GB1586725 A                                   | 1981   |
| 14. | An apparatus for teleprinting system for arabic-parsi languages   | Diab, Khaled M   | STS    | <b>IN154866 B</b>                             | 1980   |
| 15. | Procede et appareil de traitement d'informations ayant une representation en caracteres arabes  | Khaled, Mahmud Diab  | STS    | MA18599 A1<br>ES474730 A1                     | 1979<br>1979                                 |