**Curriculum-Vitae**

**Name:** **Mohan Singh RANA**

**Current Address:** Dr. Mohan Singh (RANA), Research Scientist

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**Languages known** Hindi, English, Spanish and basic in Arabic, French

**Website:** <https://scholar.google.com/citations?user=tNhz85MAAAAJ&hl=en>

**Education:**

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| **Degree/Position** | **Board/University** | **Year** | **Subject** |
| B. Sc. | H.N.B. Garhwal University, India | 1990 | Chemistry, Botany |
| M. Sc. | 1992 | Organic Chemistry |
| M. Sc. | 1993 | Inorganic Chemistry |
| Project Associate | Indian Institute of Petroleum (IIP), India | 1994 - 2000Heterogeneous Catalysis |
| Ph. D. | H.N.B. Garhwal University, **India**(Research Center: I.I.P.) | 1995-2000Hydroprocessing Catalysis \* |
| \***PhD Thesis:** “Studies on TiO2 and ZrO2 based mixed oxide hydroprocessing catalysts”. (Supervisors: Dr. T.S.R. Prasada Rao, former director IIP, CSIR) |
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**Synopsis:** Dr. Mohan S. RANA is a Senior Research Scientist at PRC-KISR since Nov., 2008. He received his PhD in heterogeneous catalysis from the Indian Institute of Petroleum (IIP), CSIR, India in 2000. He was than working for two years as visiting scientist at the University of Caen, CNRS, France, and later 6 years as a research scientist in Instituto Mexicano del Petroleo (IMP), Mexico. His research focuses on the development of catalyst for a different fraction of petroleum and their characterization. Dr. Mohan has about 23 years of work experience in areas associated with catalysis and petroleum refining processes. He authored or co-authored 115 refereed Journal articles, 9 book chapters, 95 conferences and has been awarded 8 US patents. His publication has about 7700 citations and contains about *43-h index*. He has co-edited a Journal issue of Catalysis Today “Hydroprocessing of Heavy Oil Fractions”. He has been assigned a position in the Editorial team of “Int. J. of Oil, Gas and Coal Technology”. He has co-edited a book, “Asphaltenes: Chemical Transformations During Hydroprocessing of Heavy Oils”.

**Employment History: Professional Training and Development since joined KISR 2008**

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| **Position** | **Experience/Skill** | **Period** | **Workplace** |
| Research Scientist | * Development of catalyst for deep HDS/HDM and residue
* Upgrading heavy oil using hydroprocessing
* Asphaltene characterization and its mitigation techniques
* Crude to chemical conversion or refinery integration
* Waste auto-exhaust catalyst and noble metal recovery
* CO2 utilization and its conversion to chemicals
* Graphene synthesis using waster asphaltene
* Liquid catalyst synthesis for heavy oil hydroprocessing
 | Nov. 2008 to till today | KISR, **Kuwait** |
| Research Scientist | * Evaluation of lab prepared catalysts in micro-flow and bench-scale reactors
* Selective Separation of V and Ni compounds from extra heavy oil
* Desulfurization/demetallization of extra-heavy oil using selective oxidation
* Rheological Properties of extra heavy/extra heavy crude oils
 | 2006 to 2008 | IMP, **Mexico** |
| Post-doc-fellow | * Synthesis of wide pore catalysts for HDT of Maya crude
* Characteristics of HDM catalysts: textual properties, XRD, *in-situ* FTIR, 13C-NMR, SEM-EDAX, TEM, TPR, TPS, etc.
* Effect of support on real feed (HDT functionalities)
* Synthesis of SBA-15 and its application to the heavy oil
 | 2002 to 2006 | IMP, **Mexico** |
| Post-doc-fellow | * Effect of H2S on HDS, HYD, and HDN
* Effect of H2S on real feedstock (Gas Oil)
* Effect of nitrogen compounds on HDS and HYD
* TGA analysis of H2S adsorption using *Magnetic Balance*
* Characterization of CoMo catalysts by *in-situ* FT-IR (CO2, pyridine, low-temperature CO probe molecules)
* Hydrotalcite-based CoMo catalysts for HDS and HYD
* Preparation of HDT catalysts using chelating agents
 | 2001 to 2002 | CNRS, **France** |
| Research Associate | * Synthesis and modification of KLM zeolite
* Preparation of Pt-Pd/zeolite catalyst for reforming
 | 2000 to 2001 | IIP, CSIR, **India** |

**Current Research Contracts:** Nov. 2008- till today

 Assigned as Program Manager for “**Optimization of Petroleum Refinery Processes (OPRP) Program**” at PRC, KISR, from June 2016 to June 2018.

 My responsibilities include structuring the new activities, develop available national manpower, setting up basic research laboratory for sulfide catalyst, develop an innovative proposal for industrial applications, enhance the peer-reviewed publication, which adds value to the petroleum refining department in general, and improve the image of the center at international level.

**Current Research Projects:**

* Under consideration: Turquoise and blue hydrogen production using natural gas as a feedstock
* Project PF107K: Synthesis of graphene using waste asphaltene as a source of carbon material
* PI in a project entitled “Electrochemical Valorization of CO2 into C2+ Products” (April 2022)
* PI in project PF099K: Recovery of noble metal from auto-exhaust and reforming Spent catalysts
* Project Leader PF083C: Impact of Hydroprocessing Catalyst Properties and Compositions on Asphaltene Deposition(2 years, completed, March 2020).
* Project Leader PF056C: Development of Carbon Supported Hydrodemetallization Catalyst for Kuwaiti Heavy Crude Oil, sponsored by KFAS, Kuwait(2 and half years; completed Feb. 2016).
* Project Leader PF053K: Development of Mild Hydrocracking Catalyst for Kuwaiti Residue to Enhance Middle Distillate Yield, sponsored by KISR (3 years, completed, March 2013)
* Participating as Principal Investigator (PF074K, PF099K and PF0100K); Task Leader (completed: PF037C, PF058K, PF058K, PF080K; PF085K, PF092C, PF095K).
* Spent hydroprocessing catalyst recovery and it's waste management
* Structural characterization of asphaltene
* Clean fuel: hydroprocessing catalyst and their inhibition studies
* Enhancement of fuel efficiency by improving cetane number

**Projects:** Since 1994 extensively participated & experienced in following sponsored projects:

* Kinetic Studies of Hydrodesulphurization of Naphtha with UCIL Catalyst(CoMo/Al2O3), United Catalysts India Ltd. (UCIL), 1994, IIP, **India**
* Development of Catalyst for Dehydrogenation of Butane to Butene (Pt-Sn/ZnAl2O4, MgAl2O4), Adarsh Chem. and Fertilizers Ltd. 1995, IIP, **India**
* Development of zeolite based catalyst for Natural Gas Liquid (NGL) to Gas and Gasoline (NTGG), Gas Authority India Ltd. (GAIL). 1996, IIP, **India**
* Development of Zeolite based Catalyst for Light Naphtha Aromatization, Bharat Petroleum Corp. Ltd. (BPCL) India. 1997-98, IIP, **India**
* Development of Zeolite based Reforming Catalysts for Aromatic Production, sponsored by Centre for High Technology (CHT), IIP, **India**
* Qualitative and quantitative studies of the inhibitive effect by H2S on the activity of hydrotreating Catalysts: Relationship between catalytic activity and the amount of adsorbed H2S species, sponsored by Conseil Regional de Basse-Normandie, 2001-2002, LCS-CNRS, **France**.
* Development of catalyst for Maya crude (API gravity 22) hydrotreating, PEMAX, IMP **Mexico**
* Development of catalyst for selective conversion of heavy oil into the gasoline, PEMAX, IMP **Mexico**
* Study of the di-aromatics opening Reactions using a catalyst that had been hydrogenating LCO,Texas A&M (USA), IMP and UNAM, Mexico, 2007-2009
* Up-gradation of Extra heavy Crude oil: using non heterogeneous catalytic methods, PEMAX, IMP **Mexico**

**PUBLICATION**

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| **No** | **Publication** |
|  | **US Patent** |
|  | **Mohan S. Rana,** Meena Marafi,Faisal S. AlHumaidan, and Khalidah AlDalama, Catalyst for Mild-Hydrocracking of Residual Oil, **US Patent 9919293** (Application Number 15/652,088, Filing date July 17, 2017, Patent Granted Date: March 20, **2018**) |
|  | **Mohan S. Rana**, Faisal S. AlHumaidan, Hydrodemetallization catalysts, **US Patent 9861972** (Application Number: 15/479260; Filing Date: 04/04/2017; Patent Granted Date: Jan. 09, **2018**) |
|  | Faisal S AlHumaidan, **Mohan S Rana**, V. Mari, [Synthesizing graphene derivatives from asphaltene](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=tNhz85MAAAAJ&sortby=pubdate&citation_for_view=tNhz85MAAAAJ:in81wS_EFI4C), US Patent 11,505,466, (22/11/2022)(KISR #.......) |
|  | **BOOK** |
|  | [Jorge Ancheyta](http://www.amazon.com/exec/obidos/search-handle-url/102-7317190-1373723?%5Fencoding=UTF8&search-type=ss&index=books&field-author=Jorge%20Ancheyta), [F. Trejo](http://www.amazon.com/exec/obidos/search-handle-url/102-7317190-1373723?%5Fencoding=UTF8&search-type=ss&index=books&field-author=F.%20Trejo) and [**Mohan S. Rana**](http://www.amazon.com/exec/obidos/search-handle-url/102-7317190-1373723?%5Fencoding=UTF8&search-type=ss&index=books&field-author=Mohan%20Singh%20Rana)**,** Asphaltenes: Chemical Transformation during Hydroprocessing of Heavy Oils,Taylor & Francis Group, LLC, New York, CRC ISBN-10: 1420066307, ISBN-13: 978-1420066302 (July, 2009). |
|  | **Encyclopaedia Chapter**J. Ancheyta, and **Mohan S. Rana**, Future Technology in Heavy Oil Processing, in *Encyclopaedia of Life Support Systems (EOLSS),* Developed under the Auspices of the UNESCO, Eolss Publishers, Oxford, UK, 2008. [http://www.eolss.net] |
| **Journal Publications** |
|  | F.S. AlHumaidan, M.A. Halabi, **Mohan S. Rana**, M Vinoba, [Blue hydrogen: Current status and future technologies](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=tNhz85MAAAAJ&sortby=pubdate&citation_for_view=tNhz85MAAAAJ:HNqp4bORoCIC), *Energy Conversion and Management* 283, May 2023, 116840 |
|  | F.S AlHumaidan, **Mohan S Rana**, M.Vinoba, H. M AlSheeha, A.A.Ali, [Synthesis of graphene derivatives from asphaltenes and effect of carbonization temperature on their structural parameters](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=tNhz85MAAAAJ&sortby=pubdate&citation_for_view=tNhz85MAAAAJ:xggF7591RyAC)FS AlHumaidan, MS Rana, M Vinoba, HM AlSheeha, AA Ali, ...RSC advances 13 (12), 2023, 7766-7779 |
|  | A. Pathak, **Mohan S Rana**, H Al-Sheeha, R Navvmani, H.M. Al-Enezi, S. Al-Sairafi, J. Mishra [Feasibility of bioleaching integrated with a chemical oxidation process for improved leaching of valuable metals from refinery spent hydroprocessing catalyst](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=tNhz85MAAAAJ&sortby=pubdate&citation_for_view=tNhz85MAAAAJ:PQ1NLOpCoVAC), *Environmental Science and Pollution Research*, 29 (23), (2022), 34288-34301. (Q1; IF: 5.19) (KISR#.........) |
|  | A. Pathak, H. Al-Sheeha, R Navvamani, R. Kothari, M. Marafi, **Mohan S Rana**, [Recycling of platinum group metals from exhausted petroleum and automobile catalysts using bioleaching approach: a critical review on potential, challenges, and outlook](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=tNhz85MAAAAJ&sortby=pubdate&citation_for_view=tNhz85MAAAAJ:GjXqcohcbckC), Reviews in Environmental Science and Bio/Technology, 21, 2022, 1035-1059. (**Q1; IF: 14.284**)(KISR #.......) |
|  | F.S AlHumaidan, **Mohan S Rana**, M.Vinoba, N.Rajasekaran, H.Y.AlHenyyan, A.A.Ali, [Synthesizing few-layer carbon materials from asphaltene by thermal treatment](https://www.sciencedirect.com/science/article/pii/S0925963522004988), Diamond and Related Materials 129, 2022, 109316. (**Q1; IF: 3.315**)(KISR #.......) |
|  | M Al-Samhan, J Al-Fadhli, AM Al-Otaibi, F Al-Attar, R Bouresli, **Mohan S Rana**, [Prospects of refinery switching from conventional to integrated: An opportunity for sustainable investment in the petrochemical industry](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=tNhz85MAAAAJ&sortby=pubdate&citation_for_view=tNhz85MAAAAJ:BZGggv0hN9sC), *Fuel* 310, 2022, 122161. |
|  | R. Navvamani, M. Vinoba, H. Al-Sheeha, and **Mohan S. Rana**, The Synergistic Character of Highly N-Doped Coconut–Shell Activated Carbon for Efficient CO2 Capture,ChemistrySelect, 6(34), 2021, 9149-9156. (KISR # 16861). |
|  | F.S. AlHumaidan, **Mohan S. Rana**, Determination of Asphaltene Structural Parameter by Raman Spectroscopy, Journal of Raman Spectroscopy, In press Aug. 21, 2021, **DOI:** 10.1002/jrs.6233. (KISR # 16830). |
|  | **Mohan S. Rana**, F. S. AlHumaidan, R. Bouresli, and R. Navvamani, Guard Bed Catalyst: Impact of Textural properties and their Characterization, Molecular Catalysis, 502, 2021, 111375. (KISR # 16695). |
|  | F.S. AlHumaidan, **Mohan S. Rana**, H.M.S. Lababidi, A. Hauser, Pyrolysis of asphaltenes derived from residual oils and their thermally treated pitch, ACS Omega 5(38), 2020, 24412-24421. (KISR # 16266). |
|  | V Samano, **Mohan S. Rana**, J Ancheyta, An easy approach based on textural properties to evaluate catalyst deactivation during heavy oil hydrotreating, Catalysis Communications 133, 2020, 105823. (KISR # 16834). |
|  | Faisal S. AlHumaidan, **Mohan S Rana**, N.J. Tanoli, H.M. Lababidi, N.A. Al-Najdi, Changes in Asphaltene Surface Topography with Thermal Treatment, Arabian Journal of Chemistry, 13 (5), 2020, 5377-5389. (KISR # 16234). |
|  | Sakeena H. AlSairafi, N. AlNajdi, H. Al Sheeha, **Mohan S. Rana**,Synthesis and characterization of alumina support for catalytic reactions,Reaction Kinetics, Mechanisms and Catalysis 129, 2020, 297-313. (KISR # 16828). |
|  | A. Marafi, A. Al-Barood, H. AlBazzaz, **Mohan S. Rana**, Effect of operating conditions on HDS of CGO blended middle distillate, Catalysis Today, 353, 2020, 47-52. (KISR # 16404). |
|  | **Mohan S. Rana**, Faisal S. AlHumaidan, R. Navvamani, Synthesis of large pore carbon-alumina supported catalysts for hydrodemetallization, Catalysis Today, 353, 2020, 204-212. (KISR # 16213). |
|  | A. Marafi, H. Bazzaz, **Mohan. S. Rana**, Hydroprocessing of heavy residual oil: Opportunities and challenges, Catalysis Today, 329, 2019, 125-134. (KISR # 14855). |
|  | M. Marafi, **Mohan S. Rana**, Metal leaching from refinery waste hydroprocessing catalyst, Journal of Environmental Science and Health, Part A, 53 (11), 2018, 951-959. (KISR # 15073) |
|  | **Mohan S Rana**, A. Al-Barood, R Bouresli, AW Al-Hendi, N Mustafa, Effect of organic nitrogen compounds on deep hydrodesulfurization of middle distillate, Fuel Processing Technology 177, 2018, 170-178. (KISR # 14878). |
|  | F.S. AlHumaidan, **Mohan S. Rana**, and H.M. S. Lababidi, Thermal Cracking effect on Asphaltene structure and morphology, Energy & Fuel, 31 (4), 2017, 3812-3820. (KISR # 13218).  |
|  | **Mohan S. Rana,** Mari Vinoba, Faisal S. AlHumaidan,Sustainability challenges in oil and gas development in the Middle East and North Africa,Current Sustainable Energy Report, 4(4), 2017, 232–244. (KISR # 14464). |
|  | Mari Vinoba, M. Bhagiyalakshmi, Y. Alqaheem, A. A. Alomair, A. Perez and **Mohan S. Rana**,Recent Progress of Fillers in Mixed Matrix Membranes for CO2 Separation: A Review,Separation and Purification Technology 188, 2017, 431-450. (KISR # 14157). |
|  | **Mohan S. Rana**, Heavy Oil Refining Processes and Petrochemicals: A Role of Catalysis, invited paper in Recent Advances in Petrochemical Science (RAPSCI) 2 (1), 2017, 1-3. |
|  | F.S. AlHumaidan, A. Hauser, **Mohan S. Rana**, and H.M. S. Lababidi, Impact of thermal treatment on asphaltene functional groups, Energy & Fuels, 2016, 30(4), 2892–2903. (KISR # 13233). |
|  | F.S AlHumaidan, A. Hauser, **Mohan S. Rana,** H.M.S. Lababidi, M. Behbehani, Changes in asphaltene structure during thermal cracking of residual oils: XRD study, Fuel, 150, 2015, 558-564. (KISR # 12614).  |
|  | **Mohan S. Rana**, K. Ravindranath, and N. Tanoli, Degradation of thermocouple in a temperature programmed sulphidation reactor, Engineering Failure Analysis, 55, 2015. 79-86. (KISR # 12763).  |
|  | F Trejo, **Mohan S Rana**, J Ancheyta, S Chavez, Influence of support and supported phases on catalytic functionalities of hydrotreating catalysts, Fuel, 138, 2014, 104-110. |
|  | **Mohan S. Rana**, J. Ancheyta, S. K. Sahoo, P. Rayo, Carbon and metal deposition during the hydroprocessing of Maya crude oil, Catalysis Today, 220-222, 2014. 97-105. |
|  | H. Al-Sheeha, Meena Marafi, Vira Raghavan, and **Mohan S. Rana**, Recycling and Recovery Routes for Spent Hydroprocessing Catalyst Waste, Ind. Eng. Chem. Res., **2013**, 52 (36), 12794-12801. |
|  | [F.](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=6601953455&zone=) Trejo, **Mohan S. Rana,** J.[Ancheyta,](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=55011638000&zone=) A. [Rueda,](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=55218092100&zone=)  [Hydrotreating catalysts on different supports and its acid-base properties](http://www.scopus.com/record/display.url?eid=2-s2.0-84861076438&origin=resultslist&sort=plf-f&src=s&sid=PB1rgHT6gbqtydqEtoX1sha%3a50&sot=aut&sdt=a&sl=34&s=AU-ID%28%22Rana%2c+Mohan+S.%22+7006672842%29&relpos=1&relpos=1&searchTerm=AU-ID(\%22Rana,%20Mohan%20S.\%22%207006672842)), Fuel, 100, 2012, 163-172. |
|  | [C.](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=15829455800&zone=) Leyva, J. Ancheyta, [A.](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=6603144444&zone=) Travert, [F.](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=7004224758&zone=) Mauge, [L.](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=14420252700&zone=) Mariey, [J.](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=35551024700&zone=) Ramírez, [**Mohan S.**](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=7006672842&zone=) **Rana,** [Activity and surface properties of NiMo/SiO2-Al2O3 catalysts for hydroprocessing of heavy oils](http://www.scopus.com/record/display.url?eid=2-s2.0-84859897926&origin=resultslist&sort=plf-f&src=s&sid=PB1rgHT6gbqtydqEtoX1sha%3a50&sot=aut&sdt=a&sl=34&s=AU-ID%28%22Rana%2c+Mohan+S.%22+7006672842%29&relpos=0&relpos=0&searchTerm=AU-ID(\%22Rana,%20Mohan%20S.\%22%207006672842)), [Applied Catalysis A: General](http://www.scopus.com/source/sourceInfo.url?sourceId=16342&origin=resultslist) 425-426 , 2012, 1-12. (KISR # 11014). |
|  | [F.](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=6601953455&zone=) Trejo, **Mohan S.** [**Rana,**](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=7006672842&zone=) J.Ancheyta, [Genesis of acid-base support properties with variations of preparation conditions: Cumene cracking and its kinetics](http://www.scopus.com/record/display.url?eid=2-s2.0-79951986675&origin=resultslist&sort=plf-f&src=s&sid=PB1rgHT6gbqtydqEtoX1sha%3a50&sot=aut&sdt=a&sl=34&s=AU-ID%28%22Rana%2c+Mohan+S.%22+7006672842%29&relpos=2&relpos=2&searchTerm=AU-ID(\%22Rana,%20Mohan%20S.\%22%207006672842)), [Industrial and Engineering Chemistry Research](http://www.scopus.com/source/sourceInfo.url?sourceId=13057&origin=resultslist) 50 (5), 2011, 2715-2725. (KISR # 10409). |
|  | [F.](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=6601953455&zone=) Trejo, **Mohan S. Rana,** J.Ancheyta, [Thermogravimetric determination of coke from asphaltenes, resins and sediments and coking kinetics of heavy crude asphaltenes](http://www.scopus.com/record/display.url?eid=2-s2.0-77949658688&origin=resultslist&sort=plf-f&src=s&sid=PB1rgHT6gbqtydqEtoX1sha%3a50&sot=aut&sdt=a&sl=34&s=AU-ID%28%22Rana%2c+Mohan+S.%22+7006672842%29&relpos=4&relpos=4&searchTerm=AU-ID(\%22Rana,%20Mohan%20S.\%22%207006672842)), [Catalysis Today](http://www.scopus.com/source/sourceInfo.url?sourceId=16377&origin=resultslist) 150 (3-4) , 2010, 272-278. (KISR # 9995).  |
|  | [F.](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=6601953455&zone=) Trejo, **Mohan S. Rana,** J.Ancheyta, [Stucture](http://www.scopus.com/record/display.url?eid=2-s2.0-77949658688&origin=resultslist&sort=plf-f&src=s&sid=PB1rgHT6gbqtydqEtoX1sha%3a50&sot=aut&sdt=a&sl=34&s=AU-ID%28%22Rana%2c+Mohan+S.%22+7006672842%29&relpos=4&relpos=4&searchTerm=AU-ID(\%22Rana,%20Mohan%20S.\%22%207006672842)) Characterization of Asphaltene Obtained from Hydroprocessed Crude Oils by SEM and TEM, [Energy](http://www.scopus.com/source/sourceInfo.url?sourceId=16377&origin=resultslist) & Fuel 23, 2009, 429-439. (KISR # 9997). |
|  | **MONOGRAPH:** (All time highest cited article published by KISR) |
|  | [A.](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=7003761067&zone=) Stanislaus, A. [Marafi,](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=6602000057&zone=) **Mohan S.** [**Rana,**](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=7006672842&zone=)[Recent advances in the science and technology of ultra low sulfur diesel (ULSD) production](http://www.scopus.com/record/display.url?eid=2-s2.0-77954709904&origin=resultslist&sort=plf-f&src=s&sid=PB1rgHT6gbqtydqEtoX1sha%3a50&sot=aut&sdt=a&sl=34&s=AU-ID%28%22Rana%2c+Mohan+S.%22+7006672842%29&relpos=3&relpos=3&searchTerm=AU-ID(\%22Rana,%20Mohan%20S.\%22%207006672842)), [Catalysis Today](http://www.scopus.com/source/sourceInfo.url?sourceId=16377&origin=resultslist) 153 (1-2), 2010, 1-68. (KISR # 9916). |
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|  | PF053K: **Mohan Singh,** A. Barood, and F. Al-Humaidan, **2013**. Design and installation of atmospheric glass reactor for evaluating hydroprocessing catalyst with model compounds, KISR Progress Report No. 3 (**KISR 11509)**, Feb. 2013 |
|  | PF053K: **Mohan Singh**, Characterization of support and supported hydroprocessing catalysts, KISR Progress Report No. 4 (**KISR 12062**), August 2013 |
|  | PF053K: F. Al-Humaidan, **Mohan Singh** and A. Barood. **2013.** Evaluating Mild hydrocracking activity of residue hydroprocessing catalyst. KISR Progress Report No. 5 (**KISR 11885)**, Sept. 2013 |
|  | **Proposals Written** |
|  | PF 053K: **Mohan S. Rana** and M. Marafi Catalyst Development for Mild Hydrocracking of Residual Oil to Enhance Middle Distillate Yield, KISR No 10836, **Sept. 2011.** |
|  | PF 056C: **Mohan S. Rana,** Development of Carbon Supported Hydrodemetallization Catalyst for Kuwaiti Heavy Crude Oil, KISR No: 11195**, Sept. 2014** |
|  | PF 083C: **Mohan S. Rana,** Impact of Hydroprocessing Catalyst Properties and Compositions on Asphaltene Deposition, KISR No: 14962, **April 2018.** |
|  | PF105K: Vinoba Mari, Narjes A. Ghaloum, **Mohan S Rana**, Electrochemical Conversion of CO2 into C2+ Products, KISR No: 16386, Feb. **2021.** |
|  | PF106K: **Mohan S Rana**, Synthesizing dispersed catalyst for hydroprocessing of heavy oil and residue, KISR No 16444, March **2021**. |
|  | **Book Editor** Dr. Mohan Rana, member of KISR Annual Scientific Report Review Committee |
|  | KISR Scientific Report **2013-2014** “KISR Transformation”, edt. by Housam AlOmirah, F. Taha, A. Ghosn, N. Bhat, N. Burney, M. Beg, F. Al Ragom, J. Ali, **Mohan Singh**, A. Muhkopadhyay, N. Al Shammari, M. AlAswad, A. AlNouri, ISBN: 978-99966-37-16-2.  |
|  | KISR Scientific Report **2011-2013** “KISR Scientific Report”, edt. by Housam AlOmirah, A. Ghosn, F. Taha, N. Bhat, N. Burney, M. Beg, F. Al Ragom, Shawqi Lahaleih, **Mohan Singh**, A. Muhkopadhyay, N. Al Shammari, Hanaa Najjar, ISBN: 978-99966-37-11-7. |
|  | KISR Scientific Report **2009-2010**. edt. by N. Al-Awadi, A. Ghosn, M. Beg, B. Al-Feelli, A. Muhkopadhyay, **Mohan Singh,** N. R. Bhat, N. Burney, A. Al-Nouri, F. Al-Qattan, ISBN: 978-99966-37-018. |
|  | **National/International Conference Organization****(Participated as member International Scientific Organizing Committee)** |
|  | * Member of KCC organizing Conference 2014, 2018, 2020
* International Symposium on Advances in Hydroprocessing of Oil Fractions (ISAHOF), organized by IMP, Mexico, in following years 2007, **2009, 2011, 2013, 2015, 2017, and 2019.**
* Mexican Congress on Chemical Reaction Engineering (MCCRE), organized by IMP, Mexico, in following years, 2006, 2008, **2010, 2012, 2014; 2016; 2018.**
* The IV Scientific-Technological Symposium Catalytic Hydroprocessing in Oil Refining (STS HydroCat – 2021), Russia, April 26-30, **2021** (Virtual)
* 2nd International Conference on Oil, Gas and Coal Technology (ICOGCT 2021) held in July 15, **2021**
 |
|  | **Member of International Reviewing Projects** |
|  | * International Member of Reviewing Proposal for **CONACyt, Mexico,** (reviewed 5 proposals in 2019).
* International Member of Reviewing Proposal for Russian institutions of higher learning to the Ministry of Education and Science of the Russian Federation, Russia**,** since **2019.**
 |
|  |  |
|  | **Teaching Experiences and Course given for KNPC/KOC and KCC engineers** |
|  | **Course title** | **Years** | **Country** |
| 1 | Clean Fuel Process and Technologies | 2009, 2011, 2013, 2014, 2015, 2016, 2017, 2018 | KISR, Kuwait |
| 2 | Options for upgrading residue and heavy oils | 2009, 2011 | KISR, Kuwait |
| 3 | Petroleum Classification, Evaluation, and Refining Process | 2009, 2014, 2021 | KISR, Kuwait |
| 4 | Fuel Specification and Test Method | 2014, 2018 | Bahrain & Kuwait |
|  | **Editorial Board:** |
|  | Since 2008, Dr Mohan is in Editorial board of peer reviewed professional Journal. [***International Journal of Oil, Gas and Coal Technology***](http://www.inderscience.com/ospeers/admin/editor/accepted.php?jid=242&jeID=13354&listos=54) *(IJOGCT)* published by Inderscience Enterprises Ltd., UK, which as Q3 rank (Quartile) in Energy sector, about 0.955 impact factor and having h-index-18. |
|  | **Guest Editor:** Catalysis Today: Jorge Ancheyta, **Mohan S. Rana** and Edward Furimsky, Edited a special issue of “Hydroprocessing of Heavy Oil Fractions” Volume 109 (**2005**). |
|  | **Peer Reviewing Board** |
|  | *Journal Catalysis, Applied Catalysis, J. Molecular Catalysis A: Chem., Catalysis Today, Fuel, Energy and Fuel, Catalysis Letter, Fuel Processing Technology, Chemical Engineering Journal, Chemical Engineering Communications, Catalysis Review Science & Engineering,* *Petroleum Science and Technology, etc.* |
|  | **Thesis supervised, and examiner:** |
|  | **Grade, Exam date** | **University** | **Position** | **Student Name** |
|  | BS, March 2002, | l'Université de Caen Basse-Normandie, France | Co-supervisor | S. Virginia |
|  | BS, 04/11/2003 | IPN, Escuela Superior de Ing. Química E Industrias, Mexico | Supervisor | Beatriz Caloch Mendieta |
|  | BS, 14/03/2005 | UNITEC, México | Supervisor | Ma. de la Luz Huidobro Galve |
|  | BS, 24/06/2006 | IPN, Escuela Superior de Ing. Química E Industrias, Mexico | Supervisor | Elsa Maria Ramirez Capitaine |
|  | BS,: 20/06/2006 | ITO, Oaxaca, Oaxaca, Mexico | Supervisor | E. Ana Laura Rueda Jarquin |
|  | BS,: 09/06/2008 | IPN, Escuela Superior de Ing. Química E Industrias, Mexico | Supervisor | Edgar Miguel Alvirde Hernandez |
|  | BS,: 09/06/2008 | IPN, Escuela Superior de Ing. Química E Industrias, Mexico | Supervisor | Sergio Chavez Cruz |
|  | PhD | División de Ciencias Básicas e Ingeniería, UAM, Mexico | 1st Vocal | Efraín Altamirano Sánchez |
|  | PhD | Ing. Química, UNAM, Mexico | 2nd Vocal | Fernando Trejo Zárraga |
|  |  |  |  |  |
|  | **Profile Highlights:**  |
|  | * About 25 years of R&D experience in academia and various research institutions.
* Over 8 years of industrial R&D experience with emphasis on hydroprocessing catalyst development for major Petroleum Refinery stream.
* Over 12 years of experience in industrial R&D Project Leadership.
* Over 12 years of experience in process development from laboratory to plant.
* Over 10 years of experience in managing and leading research projects.
* Several years of experience in supervising, mentoring, and guiding Science and Engineering graduates in laboratory
* About 20 years of experience in the synthesis, characterization, and evaluation of various types of inorganic materials such as inorganic oxides, supported base and active metals, metal oxides, zeolites, mesoporous (MCMs/SBA-15), and nanostructured materials as well as composites for catalytic applications.
* Extensive hands-on experience in various industrial reactions (HDS, HDN,HYD,HDM, HDAs), reactor design, and atmospheric reactor fabrication
* Extensive hands-on experience in various characterization and analytical techniques (in-situ FTIR, HRTEM, Raman, SEM, GC/GC-MS, TGA/DSC, TPR/TPD/TPO/TPS, BET, Chemisorption, ICP-AES, XRD, XRF) used for catalyst characterization.
* Extensive experience and expertise in international publications, presentations and Intellectual Property protection and Patents.
* Excellent written communication skills and effective team player
 |
|  | **Collaboration with research groups:**Canada, France, USA, UNAM-Mexico, IMP/IPN-Mexico, Kuwait University |
|  | **Membership:*** ACS membership (number: 30546530), USA
* Catalysis Society of India, India
* Life membership, Science Internationa Forum (SIF), Vijnan Bhart (VIBHA), India
 |
| **Mohan Singh RANA** | **24/02/2022** |