Curriculum vitae

Personal data

Full name : Abdelhadi Saleh Benhmid

Date of birth :17.12.1961

Place of birth : Benghazi

Nationality : Libyan

Martial state : Married

Education

1981 – 1986 B.Sc in Chemistry, Faculty of Science, Garyounis Univeristy. Benghazi-libya

1989 – 1993 M.Sc Inorganic Chemistry, Faculty of Science, Garyounis Univeristy. Benghazi-libya

2000 – 2005 Ph.D in inorganic Chemistry, Faculty of Science, Humboldt University, Berlin- Germany

Experience

1994 – 2000 Assitant lecturer in Chemistry Department, Faculty of Science, Garyounis University

2006 – 2015 Assitant Professor in Chemistry Department, Faculty of Science, Garyounis University.

2009 – 2012 Head of the Chemical Engineering Department, Bright star University, Elberga-Benghazi.

2016 – Associated Professor in Chemistry Department, Faculty of Science, Benghazi University.

2017- Present Editor in Libyan Journal of Science & Technology.

Scientific and technical expertise

Heterogeneous Catalytic reactions / Selective oxidations

- Partial oxidation of aromatics (e.g. toluene).
- Fine chemical syntheses via gas phase catalytic oxidations.
- Acetoxylation of alkyl aromatics.
- Natural gas utilization (oxidative coupling of methane to light olefins)
- Dehydrogenation and hydrogenation reactions.

Catalyst synthesis and Characterization

- Synthesis of transition metal oxide and noble metal based catalysts using various preparative methods (e.g. impregnation, co-precipitation).
- Supported bi-metallic and multi-component catalysts.
- Synthesis of active and selective Pd-containing acetoxylation catalysts
- Preparation and application of oxide supports (TiO_2, Al_2O_3, SiO_2, ZrO_2).
- Catalyst characterization by various techniques (e.g. BET-SA, TGA, DTA, XRD, FTIR, XPS, TEM, and TPR).

Research Interest

- Oxidative coupling of toluene with methane to styrene.
- Conversion of methane and CO_2 to useful chemicals.
- Coupling of dehydrogenation and hydrogenation reactions.
- Oxidative dehydrogenation of light alkanes.
- Development of catalysts for vapor phase acetoxylation of toluene.

List of Publications

Articles and Patents in Scientific journals

Patents

1. Festphasenkatalysator, Verfahren zu seiner Herstellung und seine Verwendung zur Herstellung von Arylestern, A. Benhmid, K.V. Narayana, S. Bischoff, A. Martin, B. Lücke, DE 10 2004 002 262 A1 (2005).
2. Solid phase catalyst, associated production method and use in the production of aryl esters, A. Benhmid, A. Martin, K.V. Narayana, B. Lücke, S. Bischoff, WO 002005/066107 A1 (2005).
3. Process for producing benzyl esters from methyl aromatics, A. Benhmid, K.V. Narayana, A. Martin, B. Lücke, DE 10 2004 030 525 A1 (2006).

Publications

4. Spectral Studies of Eriochrome Black T in Cationic surfactants, Khaled Edbey, Ashraf ElHashani, Abdelhadi Benhmid, Kamal Ghwel and Mohamed Benamer, Chemical Science International journal, 24(4): 1-12, 2018; Article no.CSIJ.44312 ISSN:2456 -706X

5. Synthesis procedure and Physico-chemical characterization of supported Molybdenum oxide catalysts, Abdelhadi S. Benhmid a,, Khaled M. Edbey , Ali F. Bukhzam , Hend M. Alhowari , Gamal. A. Mekhemer , Mohamed. I. Zaki, Libyan Journal of Science & Technology 8:1 (2018) 5 - 11.
6. Surface Acidity of the Supported Molybdenum oxide Catalysts Probed by Potentiometric Titration of n-butyl amine, A. Benhmid, K. Edbey, A. Bukhzam, H. Alhowari, G. A. H. Mekhemer and M. I. Zaki, International Research Journal of Pure & Applied Chemistry 16(3): 1-7, 2018; Article no.IRJPAC.41667 ISSN:2231-3443

7. Decomposition of 2-propanol over alumina supported thoria and potassium ion modified catalysts, A. Bukhzam, A. Benhmid, K. Edbey, S. Elsahli, G.A.H. Mekhemer and M. I. Zakib, Libyan Journal of Science & Technology 7:1 (2018) 1 - 4

8. Synthesis procedure and Physico- Chemical characterization of Alumina supported Thoria and potassium –ion Modified Catalysts, A. Bukhzam, A. Benhmid, K. Edbey, S. Elsahli, G.A.H. Mekhemer and M. I. Zakib, Journal of Applied Chemical Science International, 8(2): 80-88 (2017)

9. The Influence of ACAC on the Electrodeposition of Nickel from Ionic Liquid Type (II) System as Brihtener, K.elttaib, A. Benhmid, K. Edbey and G. Mekhemer,NAIRJC., ISSN: 2454 - 7514 Vol. 2, Issue 1 January 2016

10. Spectrophotometric and conductometric study of methyl orange – cetylpyridinium chloride ion pair in aqueous solution, Khaled Edbey, K. El Ttaib, A. Benhmid, Fateh Eltaboni, Abdelqader Imragaa and Anas Alferjany, British,J. A. S. T., 13, 6 (2016) 1.

11. Electrolytic deposition of nickel from ionic liquid type (II) using ethylenediamine as brighteners, K.elttaib, A. Benhmid and G. Mekhemer, Rasayan, J. Chem., 3, 8 (2015) 266.
12. Procedures involving reduction with thiourea. Rapid potentiometric method for determination of vanadium alone or in binary mixtures, alloys, ores and glass, Kh.Elgendy, A. Bukhzam, A.Benhmid, J. Chem. Pharm. Res., 6, 7 (2014) 1780.
13. Influence of Pd-precursor on the Acetoxlatioin Activity of Pd-Sb/TiO_2 Catalysts A. Benhomeid, V.N. Kalevaru, J. Radnik, B. Lücke, A. Martin "New Technologies and Alternative Feedstocks in Petrochemistry and Refining" October 9 -11, 2013, Dreseden, Germany.
14. Palladium catalysed vapour phase aerobic acetoxylation of toluene to benzyl acetate, V.N. Kalevaru, A. Benhmid, J. Radnik, M.-M. Pohl, B. Lücke, A. Martin, Catal. Today, 141 (2009) 317
15. Gas phase acetoxylation of toluene to benzyl acetate over Sb-Pd/TiO_2 catalysts: Effect of Sb loading, V.N. Kalevaru, A. Benhmid, J. Radnik, B. Lücke, Full paper published in DGMK Tangugsbericht (Future feedstocks as fuels and chemicals), 3 (2008) 233, ISBN 978-3-936418-81-1.
16. Novel Pd catalysts with improved performance for vapour phase acetoxylation of toluene, A. Benhmid, B. Lücke, V. Narayana Kalevaru, A. Martin, U. Dingerdissen, “Oil Gas European Magazine”, 32 (2006) 141.
17. Novel Pd catalysts with improved performance for vapour phase acetoxylation of toluene, A. Benhmid, B. Lücke, V.Narayana Kalevaru, A. Martin, U. Dingerdissen, “Erdöl Erdgas Kohle/EKEP”, 122 (2006) 141.
18. Direct synthesis of benzyl acetate and optimisation of reaction conditions for the gas phase acetoxylation of toluene, A. Benhmid, V. Narayana Kalevaru, A. Martin, B. Lücke and M.-M. Pohl, Catal. Today, 112 (2006) 192.
19. Novel Pd catalysts with improved performance for vapour phase acetoxylation of toluene, A. Benhmid, B. Lücke, K.V. Narayana, A. Martin, U. Dingerdissen, DGMK Tagungsbericht-2 on “Oxidation and Functionalisation: Classical and alternative routes and sources” Milan, Italy, (2005) p.151.
20. Desaktivierung von Pd-Katalysatoren zur Acetoxylierung: direkte Beobachtung durch XPS-Untersuchungen, J. Radnik, A. Benhmid, K. V. Narayana, M.-M. Pohl, A. Martin, B. Lücke, U. Dingerdissen, Angew. Chem. 117 (2005), 6929.
21. Highly efficient Pd-Sb-TiO_2 catalysts for the vapour phase acetoxylation of toluene to benzyl acetate, A. Benhmid, K.V. Narayana, A. Martin, B. Lücke, S. Bischoff, M.-M. Pohl, J. Radnik, M. Schneider, J. Catal. 230 (2005) 420.

22. Development of highly active and selective novel Pd based acetoxylation catalysts and prevention of catalyst deactivation by Bi modification, A. Benhmid, K.V. Narayana, A. Martin, B. Lücke, M.-M. Pohl, Chem. Commun. issue. no. 21 (2004) 2416.
23. Highly active and selective Pd-Cu-TiO_2 catalyst for the direct synthesis of benzyl acetate by gas phase acetoxylation, A. Benhmid, K.V. Narayana, A. Martin, B. Lücke, M.-M. Pohl, Chem. Lett. 33 (2004) 1238.
24. One-step synthesis of benzyl acetate by gas phase acetoxylation of toluene over highly active and selective Pd-Sb-TiO_2 catalysts, A. Benhmid, K.V. Narayana, A. Martin, B. Lücke, Chem. Commun. isse no:18 (2004) 2118.

Papers presented at various Symposia

1. Acetoxylation of toluene to benzyl acetate over supported Pd catalysts, K.V. Narayana, A. Benhmid, A. Martin, B. Lücke, presented at a Catalysis workshop on "Selective Oxidation - State of the Art & Perspectives - Berlin, Germany" during 3rd-4th June 2004.
2. Influence of promoter on the gas phase acetoxylation of toluene to benzyl acetate over supported Pd based catalysts, A. Benhmid, K. V. Narayana, A. Martin, B. Lücke, Presented at "3rd School on Catalysis" held in Ustron, Poland, during 21-26.09.2004.
3. Direct synthesis of benzyl acetate from toluene by vapour phase acetoxylation, A. Benhmid, K. V. Narayana, A. Martin, B. Lücke, M.-M. Pohl, Presented at First conference of CONCORDE held at Louvain-la-Neuve, Belgium during Jan 26-28, 2005.
4. Optimisation of reaction conditions for gas phase acetoxylation of toluene to benzyl acetate over Pd-Sb/TiO_2 catalysts, A. Benhmid, K. V. Narayana, A. Martin, B. Lücke, U. Dingerdissen, Presented at 38. Jahrestreffen Deutscher Katalytiker held at Weimar (Germany) during 16-18 March 2005.
5. Novel process for highly selective synthesis of benzyl acetate by selective gas phase acetoxylation of toluene, A. Benhmid, K.V. Narayana, A. Martin, B. Lücke, paper presented at AchemAmerica2005 held at Mexico city during April 12-15, 2005.
6. Recent developments and remarkable achievements on gas phase acetoxylation of toluene to benzyl acetate, K. V. Narayana, A. Benhmid, A. Martin, B. Lücke, presented at Tessenderlo Chemie S.A., Tessenderlo, Belgium on 25.01.2005.
7. Gas phase acetoxylation of toluene to benzyl acetate over Pd-Sb/TiO_2 catalysts, A. Benhmid, K.V. Narayana, A. Martin, B. Lücke, U. Dingerdissen, Presented at "5th World Congress on Oxidation Catalysis (WCOC)" held at Sapporo, Japan, during 25-30.09. 2005
8. New insights on the improvement of the stability of Pd based catalysts for the acetoxylation of toluene by Bi., J. Radnik, M.-M. Pohl, M. Schneider, A. Benhmid, K. V. Narayana, A. Martin, U. Dingerdissen, Presented at "11th European Conference on Applications of Surface and Interface Analysis (ECASIA)" held at Vienna, Austria, during September 25-30 2005.
9. Novel Pd catalysts with improved performance for vapour phase acetoxylation of toluene, A. Benhmid, B. Lücke, V. Narayana Kalevaru, A. Martin, U. Dingerdissen, Presented at DGMK conference, entitled "Oxidation and Functionalisation: Classical and Alternative routes and sources" held at Milan (Italy) during October 12-14, 2005.
10. Reactivity of supported Pd catalysts for the gas phase acetoxylation of toluene, A. Benhmid, K. V. Narayana, A. Martin, B. Lücke, U. Dingerdissen, Presented at "7th International Symposium on Catalysis Applied to Fine Chemicals (CAFC-7)" held at Bingen (Germany) during 23-27 Oct. 2005.
11. A new class of Pd catalysts for gas phase acetoxylation of toluene and successful prevention of catalyst deactivation, A. Benhmid, K. V. Narayana, A. Martin, B. Lücke, U.

Dingerdissen, Presented at "10th International Symposium on Catalyst Deactivation, February 5-8 2006, Berlin, Germany.

12. Untersuchungen zum Einfluss von Bi auf das katalytische Verhalten von Pd-Sb-Katalysatoren in der Acetoxylierung von Toluol, J. Radnik, M.-M. Pohl, M. Schneider, A. Benhmid, V.N. Kalevaru, A. Martin,U. Dingerdissen, B. Lücke, Presented at XXXIX Jahrestreffen Deutscher Katalytiker held at Weimar (Germany) during 15-17 March 2006.
13. Der Einfluss von Promotoren auf die Eigenschaften von TiO_2-geträgerten Pd-Katalysatoren zur Gasphasenacetoxylierung von Toluol, J. Radnik, A. Benhmid, V.N. Kalevaru, M. Schneider, M.-M. Pohl, A. Martin, B. Lücke, Presented at 105. Bunsentagung (Heterogene Katalyse: Brücke zwischen Ideal- und Realsystemen), held at Erlangen (Germany) during 25-27 May 2006.
14. Activity enhancement effects of Pd and Sb loadings in the gas phase acetoxlyation of toluene; V. Narayana Kalevaru, A. Benhmid, J. Radnik, M.-M. Pohl, B. Lücke, A. Martin; Presented at the 40th Jahrestreffen Deutscher Katalytiker, held at Weimar, Germany, during 14th to 16th March 2007.
15. Investigations on the influence of Pd and Sb loadings for selective acetoxylation of toluene, B. Luecke, V.N. Kalevaru, A. Benhmid, A. Martin, presented at International Symposium on Relations between Homogeneous & Heterogeneous Catalysis (ISHHC XIII), held at California, USA during July 16-20, 2007.
16. In-depth characterisation of Pd based acetoxylation catalysts, V.N. Kalevaru, A. Benhmid, J. Radnik, M.-M. Pohl, B. Lücke, A. Martin, Presented at "41st Jahrestreffen Deutscher Katalytiker", held at Weimar, Germany, during 27th to 29th Feb 2008.
17. Effect of support on the acetoxylation performance of PdSb catalysts, V.N. Kalevaru, A. Benhmid, J. Radnik, B. Lücke, A. Martin, presented at "13th Nordic Symposium on Catalysis" held at Göteberg, Sweden, during 5-7 Oct 2008.
18. Influence of co-components on the activity, selectivity and long-term stability of Pd-containing acetoxylation catalysts, V.N. Kalevaru, A. Benhmid, A. Martin, lecture delivered at Indian Institute of Petroleum, Dehradun, India on 7th Nov 2008.
19. Influence of Pd-precursor on the Acetoxlatioin Activity of Pd-Sb/TiO_2 Catalysts A. Benhomeid, V.N. Kalevaru, J. Radnik, B. Lücke, A. Martin "New Technologies and Alternative Feedstocks in Petrochemistry and Refining" October 9 -11, 2013, Dreseden, Germany.

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