Kripal Singh Lakhi

CONTACT INFORMATION

X, Future Industries Institute, UniSA
Mawson Lakes 5095 South Australia
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EDUCATION

The University of South Australia, South Australia, Australia **Nov 2015 – Dec 2016**
Ph.D. Candidate, Chemcial Engineering
Thesis: Design of Novel Functionalized Carbon Nitride Nanostructures for Carbon Capture and Photocatalytic Applications

Principal Supervisor : Prof. Ajayan Vinu

The University of Queensland, Brisbane, Australia **Jan 2013- Oct 2015**
Graduate Researcher, AIBN

Indian Institute of Technology (IIT) Madras, Chennai, India **Aug 2006 – May 2011**
M.Tech., Chemical Engineering (2010 – 2011)
Thesis: Experiments on ZSM-23 and Theta-1.

B.Tech., Chemical Engineering (2006 – 2010)
Minor in Financial management

PROFESSIONAL EXPERIENCE

Research Associate, *Future Industries Institute, Uni of South Australia* **Jan 2017 – present**

Researcher, *Australian Institute for Bioengineering and Nanotechnology* **Aug – Nov 2012**

Research Associate, *NCCR, IIT Madras, Chennai India* **June – July 2012**

Process Engineer, *VCM plant, Reliance Industries Ltd, India* **June 2011 – May 2012**

Engineering trainee, *BOC Gases, India* (*A member of Linde Group*) **May – July 2009**

TEACHING EXPERIENCE

Teaching Assistant, *School of Chemical Engineering*, University of Queensland. **Aug 2013 – Oct 2015**

Teaching Assistant, *Department of Chemical Engineering , IIT Madras* **May 2010 – May 2011**

JOURNAL PUBLICATIONS

1. **K. S. Lakhi**, D.-H. Park, Stalin Joseph, Siddulu N. Talapaneni, Ugo Ravon,Khalid Al-Bahily, A. Vinu, *Effect of heat treatment on the nitrogen content and its role on the CO2 adsorption capacity of highly ordered mesoporous carbon nitride,* ***Chemistry -An Asian Journal, 2017.*** **Impact factor 4.592**
2. Gurwinder Singh, Inyoung Kim,**K. S. Lakhi**, Prashant Srivastava, Ravi Naidu, A. Vinu, *Single step synthesis of activated bio-carbons with a high surface area and their excellent CO2 adsorption capacity,* ***CARBON, 2017, 116, 448-455.*** **Impact factor 6.19**
3. **K. S. Lakhi**, D.-H. Park, Gurwinder Singh, Siddulu N. Talapaneni, Ugo Ravon,Khalid Al-Bahily, A. Vinu, *Energy efficient synthesis of hihgly ordered mesoporous carbon nitrides with uniform rods and their superior CO2 adsorption capacity,* ***Journal of Material Chemistry A, 2017.*** **Impact factor 8.262**.
4. **K. S. Lakhi**, D.-H. Park, W. S. Cha, B. Viswanathan, J.-H. Choy, A. Vinu,*Mesoporous Carbon Nitride : Synthesis, Properties and Applications,* ***Chem.Soc.Rev***, **2017**, 46, 72-101. **(Highlighted as inside cover image) Impact factor 34.09**

5. **K. S. Lakhi**, W. S. Cha, M. Al-Ejji, A. Abdullah, J.-H. Choy, A. Vinu, *Microwave assisted Synthesis of Mesoporous Carbon with Controlled Morphology and Tunable Pore Diameters for High Pressure CO2 adsorption,* ***Micropor. Mesopor.Mater.***,233 , **2016**, 44-52. **(Among the most downloaded papers over a 3 month period)Impact factor 3.349**
6. P. Kalita, S. S. Al-Deyab, M. El-Newehy, G. Lawrence, A. V. Baskar, **K. S. Lakhi**, J. H. Choy, A.Vinu, *Preparation of Highly Active Triflic Acid Functionalized SBA-15 Catalysts for the Synthesis of Coumarin Under Solvent Free Condition,* ***ChemCatChem***, **2016**, 8, 336-344.**(Highlighted as front cover image) Impact factor 4.724**
7. **K. S. Lakhi**, A.V. Bhaskar, J. S. M. Zaidi, S. S. Al-Deyab, M. El-Newehy, J.-H. Choy, A. Vinu, *Morphological control of mesoporous CN based hybrid materials and their excellent carbon dioxide adsorption capacity,* ***RSC Advances***, 5,**2015** ,40183-40192.**Impact factor 3.289**
8. **K. S. Lakhi**, W. Cha, S. Joseph, B. J. Wood, S. S. Al-deyab, J. H. Choy, A. Vinu,*Cage Type Mesoporous Carbon Nitride with Large Mesopores for CO2 Capture,* ***Catalysis Today***, 243,**2015** 209-217.**Impact factor 4.312**
9. L. Zhong, C. Anand, **K. S. Lakhi**, G. Lawrence, A. Vinu, *Bifunctional Mesoporous Carbon Nitride: Highly Efficient Enzyme-like Catalyst for One pot Deacetalization-Knowevenagel Reaction,* ***Scientific Reports***, 5, **2015**,12901.**Impact factor 5.228**
10. L. Zhong, A. Chokkalingam, W. S. Cha, **K. S. Lakhi**, X. Su, G. Lawrence, A. Vinu, *Pd Nanoparticles Embedded in Mesoporous Carbon : A Highly Efficient Catalyst for Suzuki-Miyaura Reaction,* ***Catalysis Today***, 243, **2015**, 195-198.**Impact factor 4.312**
11. D. S. Dhawale, G. P . Mane, S. Joseph, S. N. Talapaneni, C. Anand, A. Mano, S. S .Aldeyab, **K. S. Lakhi**, A.Vinu, *title missing,* ***RSC Advances***, 5, **2015**, 13930-13940. **Impact factor 3.289**
12. U. Suryavanshi, V. V. Balasubramanian, **K. S. Lakhi**, G. P. Mane, K. Ariga, J. H. Choy, D. H. Park, A. Vinu, *Mesoporous BN and BCN Nanocages with High Surface Area and Spherical Morphology,****Physical Chemistry Chemical Physics***, 16, **2014**, 23554-23557.**Impact factor 4.449**
13. S. Alam, C. Anand, **K. S. Lakhi**, J. -H. Choy, W. S. Cha, A. Elzhatry, S. S. Al-deyab, Y. Ohya, A. Vinu, *Highly Magnetic Nanoporous Carbon/Iron Oxide Hybrid Materials,* ***ChemPhysChem*** , 15, **2014**, 3440-3443.**Impact factor 3.135**
14. R. Chakravarti, M. L. Kantam, H. Iwai, S. S. Al-deyab, K. Ariga, D. H. Park, J. H. Choy, **K. S. Lakhi** , A.Vinu, *Mesoporous Carbon Functionalized with Aromatic , Aliphatic and Cyclic Amines and their Superior Catalytic Activity,* ***ChemCatChem***, 6 , **2014**, 2872-2880.**Impact factor 4.724**
15. A. Vinu, C. Anand, V. P. Subramaniam, **K. S. Lakhi** , *Selected Peer-Reviewed Articles from the 1st International Conference on Emerging Advanced Nanomaterials (ICEAN 2012),* ***Sci. Adv. Mater***, 6 , **2014**, 1299-1304.**Impact factor 1.812**
16. B. Viswanathan, S. Murugesan, A. Ariharan, **K. S. Lakhi** , *Hetero Atom Substituted Carbon Potential Hydrogen Storage Materials,* ***Adv. Porous Mater***, 1 , **2013**, 122-128.

Books/Aritcles I have co-authored the following books and articles with major international publishers.

1. **Kripal S. Lakhi**, Devaraju M.K, Sivanesan Arumugam, Ajayan Vinu, book chapter titled **Self Assembly for Mesoporous Carbons**, **Comprehensive Supramolecular Chemistry II**, Elsevier, BV Germany. In press
2. **Kripal S. Lakhi** & B. Viswanathan, **Chemical Engineering : A Comprehensive Approach**, Alpha Sciences International Ltd, Oxford, United Kingdom, 2013.
3. S.M.J.Zaidi & **Kripal S. Lakhi** *Encyclopedia of Membranes*, Edited by Enrico Drioli and Lidietta Giorno, **Springer Verlag**, Germany, 2016 **(I contributed five articles to this encyclopedia)** ISBN : 978-3-662-44325-5

Oral Presentation ***The Energy and Materials Research Conference***, Complutense University of Madrid, Madrid, Spain, February **2015**,

First International Conference on nanotechnology, nanomaterials and thin films for energy applications, University College London, London, United Kingdom, January **2014**.

Peer Reviewer

Recently I have been appointed as a peer-reviewer for the scientific ***Journal Microporous and Mesoporous Materials*** published by Elsevier.

Poster presentation

I presented posters at the following conferences/symposiums.

- Poster at **4th International Symposium on Green Energy Conversion** , University of Yamanashi, Kofu , Japan **August 2015**.
- Poster at **9th International Mesostructure Materials Society Symposium**, Brisbane ,Australia, **August 2015**.
- Poster at **2nd International Symposium on Green Energy Conversion** , University of Yamanashi, Kofu , Japan **September 2013**.

Scholastic Achievements

Best poster award in materials for energy category at the 2nd International workshop on Green Energy conversion, Japan September 2013.

Graduate Travel Award 2nd International workshop on Green Energy conversion, September 2013.

Graduate Travel Award 4th International workshop on Green Energy conversion, September 2015.

University of Queensland International (UQI) Tuition Fee Scholarship. Jan 2013 – Nov 2015

Selected as a Guest Editor for the ICEAN 2012 special issue of the scientific Journal **Science of Advanced Materials (SAM)** 2013.

Recipient of **Merit cum means** (MCM) scholarship offered by Indian Institute of Technology Madras. July 2006 – April 2010

Graduate Teaching Assistantship, Ministry of Human Resources and Development, Govt of India. May 2010 – May 2011

All India Rank holder of **1711** in IIT JEE-2006 and **1137** in GATE-Chemical 2010 exams conducted by IITs.

Leadership Experience

Laboratory Manager **Jan 2013 – Oct 2015**

First aid officer, AIBN, University of Queensland **Jan 2013 –Oct 2015**
Qualified to deliver first aid to co-workers during working hours.

Instrument Skills

I have over 3 years of hands on experience in using the following equipment.

1. Microscopy : 6600 JEOL (LaB 6) ,7001 FE-JEOL , HR-TEM (Technai F20, Philips).
2. X-ray photoelectron spectroscopy (XPS), Small angle X-ray scattering (SAXS).
3. Microporosity and Surface area analyzers (Micromeritics 2420, Tristar 3020, Quantachrome IQ2 and Quadrasorb).
4. High pressure sorption equipment HP1 (goes upto 200 bar)from Quantachrome.

Reference

I work closely with the following individuals and the same can be contacted for any reference check.

1. Prof. Ajayan Vinu
   X, Future Industries Institute,
   The University of South Australia
   Mawson Lakes, 5095, South Australia

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2. Prof. B. Viswanathan
National Centre for Catalysis Research
Indian Institute of Technology Madras
Chennai-600036 , Tamil Nadu
Email: bvnathan@iitm.ac.in , Ph: +91(44)-2257-4241