CURRICULUM VITAE

Dr. Sudhir Kumar

Nationality: Indian

Date of Birth: Sept. 1st 1983

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Academic qualifications

- **PhD**, Department of Material Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan, (2010-2014)
- **M.Tech.** CIPET/UP Technical University, Lucknow, India, (2006-2008).
- **M.Sc.** C. S. J. M. University, Kanpur, India, (2003-2005).
- **B.Sc.** from C.S.J.M. University, Kanpur, India, (2003).

Current position and professional experience

- **Post-doctoral Fellow:** ETH Hönggerberg, Zurich Switzerland (Oct. 2015 to -)
- **Post-doctoral Fellow:** National Tsing-Hua University (NTHU), Taiwan (March 2015 to Sept. 2015).
- **Project Associate:** Indian Institute of Technology Kanpur (IITK), India (June 2008 to September 2010)

Invited talk and lectures

- Indian Institute of Technology Kanpur (IITK), Department of Chemical Engineering (Host: Prof. Jayant K. Singh) Feb. 2012.
- Sardar Patel University, Anand (Gujrat) India (Lecture series) Feb. 14th to 16th 2015.

Academic achievements & awards

- Secured All India Rank (AIR) 218th in GATE examination.
- Secured out-standing international student scholarship NTHU.
- Ist prize for poster presentation in *UK-TW COOPM-2011* conference.
- Received the funding from ICFPE conference organizing committee to attend the ICFPE-2012 in Tokyo University Japan.
- Received the full funding support from National Science Council (NSC) and Ministry of Economic Affairs (MEA) to attend the ICASIT-2012 conference.
- Received the full funding support from National Science Council (NSC) and Ministry of Economic Affairs (MEA) to attend the ICMS-2013 conference.

Book Chapter

1. J. H. Jou, **Sudhir Kumar**, Y. C. Jou, "Disruptive characteristics and lifetime issues of organic light emitting diodes," ***Organic light-emitting diodes(OLEDs): materials, devices and applications,*** Woodhead Publishing Ltd. U.K., **Edited By;** A. Buckley (2012). (**ISBN:** 13:978-0-85709-425-4).

Papers in International Journals & Conference Proceedings

1. J. H. Jou, **Sudhir Kumar,** M. Singh, Y.-H. Chen, C.-C. Chen, M.-T. Lee, Carrier modulation layer enhanced organic light emitting diodes, *Molecules*, **2015,** 20, 13005-13030.(**Invited**)

2. J. H. Jou, **Sudhir Kumar**, P.-H. Fang, A. Venkateswararao, K. R. J. Thomas, J.-J. Shyue, Y.-C. Wang, T.-H. Li, Hui-Huan Yua, Highly efficient ultra-deep blue organic light-emitting diodes with a wet- and dry-process feasible cyanofluorene acetylene based emitter, *Journal of Materials Chemistry C*, **2015**, 3, 2182-2194.

3. J. H. Jou, **Sudhir Kumar**, C. C. An, M. Singh, H. H. Yu, C. Y. Hsieh, Y. X. Lin, C. F. Sung, C. W. Wang, Enabling a blue-hazard free general lighting based on candle light-style organic light emitting diode, *Optics Express*, **2015**, 23(11), A576.

4. J. H. Jou, **Sudhir Kumar,** A. Agrawal, T.-H. Li, S. Sahoo, Approaches for fabricating high efficiency organic light emitting diodes, *Journal of Materials Chemistry C*, **2015**, 3, 2974-3002.

5. J. H. Jou, K.-Y. Chou, F.-C. Yang, C.-H. Hsieh, **Sudhir Kumar**, A. Agrawal, S.-Z. Chen, T.-H. Li, H.-H. Yu, Pseudo-natural light for lighting and display, *Advanced Optical Materials*, **2015**, 3, 95-102.

6. J. H. Jou, T.-H. Li, **Sudhir Kumar**, C. C. An, A. Agrawal, S.-Z. Chen, P.-H. Fang, G. Krucaite, S. Grigalevicius, J. Grazulevicius, and C.-F. Sung, Enabling high-efficiency organic light-emitting diodes with a cross-linkable electron, confining hole transporting material, *Organic Electronics*, **2015**, 24, 254–262.

7. R. K. Konidena, K. R. J. Thomas, **Sudhir Kumar**, Y.-C. Wang, C.-J. Li, Jwo-Huei Jou, Phenothiazine decorated carbazoles: effect of substitution pattern on the optical and electroluminescent characteristics, *The Journal of Organic Chemistry*, **2015**, 80, 5812–5823.

8. D. Karthik, K. R. J. Thomas, J.-H. Jou, **Sudhir Kumar**, Y.-L. Chen, Y.-C. Jou, Deep-blue emitting pyrene-benzimidazole conjugates for solution processed organic light-emitting diodes, *RSC Advances*, **2015**, 5, 8727-8738.

9. J. H. Jou, **Sudhir Kumar**, C. C. An, S. H. Chen, S. H. Shih, S. C. Lin, Enabling a low circadian rhythm impact lighting on basis of candle light giving OLEDs, *SID **2015** DIGEST*. (Accepted)

10. J. H. Jou, **Sudhir Kumar**, D. Tavgeniene, C. C. An, P. H. Fang, E. Zaleckas, J. V. Grazulevicius, S. Grigalevicius, Wet-process feasible novel carbazole-type molecular host for high efficiency phosphorescent organic light emitting diodes, *Journal of Materials Chemistry C*, **2014**, 2, 8707-8714.

11. J.-H. Jou, C.-Y. Hsieh, P.-W. Chen, **Sudhir Kumar,** J. H. Hong, Candle light-style OLED: a plausibly human-friendly safe night light, *Journal of Photonic for Energy*, **2014**, 4, 043598.

12. S.-Y. Liao, **Sudhir Kumar**, H.-H. Yu, C.-C. An, Y.-C. W., J.-W. Lin, Y.-L. Wang, Y.-C. Liu, C.-L. Wu, J.-H. Jou, Organic light emitting diode with color tunable between bluish-white daylight and orange-white dusk hue, *International Journal of Photoenergy*, **2014**, http://dx.doi.org/10.1155/2014/480829.

13. Sudhir Kumar, J.-H. Jou, C.-Y. Hsieh, Y.-C. Jou, J.-R. Tseng, An energy efficient and high color rendering index candle light-style organic light emitting diode for illumination, *Physics of Semiconductor Devices*, **Edited by:** V. K. Jain and A. Verma, Springer International Publishing Switzerland, **2014**, [DOI:10.1007/978-3-319-03002-9_237].

14. C. T. Chen, W. S. Chao, H. W. Liu, Y. Wei, J. H. Jou, **Sudhir Kumar**, Spirally configured cis-stilbene/fluorene hybrids as bipolar, fluorescent materials for OLED applications, *RSC Advances*, **2013**, 3, 9381-9390.

15. Sudhir Kumar, J. H. Jou, S. H. Chen, C. C. Chen, C. C. Wang, A physiologically-friendly color-temperature tunable organic light emitting diode for illumination, **2013**, *IDMC-13*, DOI: 10.13140/2.1.3632.0003.

16. Sudhir Kumar S.-M. Shen, S.-H. Chen, C.-C. Wang, C.-C. Chen, J.-H. Jou, High efficiency very low color temperature phosphorescent organic light emitting diodes, *IPCSIT press Singapore*, **2012**, 28, 117-121.

17. J. H. Jou, W.-B. Wang, S.-M. Shen, **Sudhir Kumar**, I-M. Lai, J.-J. Shyue, S. Lengvinaite, R. Zostautiene, J. V. Grazulevicius, S. Grigalevicius, S.-Z. Chen, C.-C. Wu, Highly efficient blue organic light emitting diode with an oligomeric host having high triplet energy and high electron mobility, *Journal of Material Chemistry*, **2011**, 21, 9546-9552.

Manuscripts under consideration and preparation

1. J. H. Jou, **Sudhir Kumar**, M. Singh, S. Kumar, K. R. J. Thomas, Enabling a ultra-violet emission using an organic electro-fluorescent emitter.(Under review).

2. J.-H. Jou, S. Sahoo, **Sudhir Kumar**, H.-H. Yua, P.-H. Fang, M. Singh, G. Krucaite, D. Volyniuk, J.V. Grazulevicius, S. Grigalevicius, Wet- and dry-process feasible carbazole type hosts for highly efficient phosphorescent OLEDs.(Under review).

3. J. H. Jou, **Sudhir Kumar**, C. C. An, Current status of blue organic light emitting diodes: Structure and properties relationship of light emitting materials.(To be submitted soon)

4. A. Venkateswararao, K. R. J. Thomas, **Sudhir Kumar**, J.-H. Jou, Solution-processable cyanofluorene acetylene conjugate materials for blue organic light emitting diodes.(Under preparation)

5. J. H. Jou, **Sudhir Kumar**, S. Sahoo, C. C. An, P. H. Fang, R. Grinieneb, D. Volyniukb, Juozas V. Grazulevicius, S. Grigalevicius, Solution-processable novel carbazole type hole transporting materials for organic light emitting diodes. (Under preparation)

6. J. H. Jou, **Sudhir Kumar**, M. Singh, C. T. Chen, W. S. Chao, Marked efficiency improvement of organic light emitting diodes with electron-transporting and hole confinement enhancing functional layers.(Under preparation)

Patents

1. J. H. Jou, **Sudhir Kumar**, K. R. J. Thomas, Novel light-emitting material, 103-I-NTHU-103 (US and R.O.C. patents) R1-20140801. (Pending)

2. J. H. Jou, **Sudhir Kumar**, K. R. J. Thomas, Electro-fluorescent emitter for ultra-violet OLED, 103-I-NTHU-107 (US and R.O.C. patents) J 4P103148. (Pending)

Conferences

1. **Sudhir Kumar**, Y. C. Jou, W. B. Wang, J. H. Jou, S. Grigalevicius, "Oligomeric host-based high-efficiency blue organic light emitting diodes" *Annual meeting of Polymer Society*, Taichung, Taiwan (Jan. 2011). [**Poster**]

2. Y. C. Jou, **Sudhir Kumar**, W. B. Wang, S. Grigalevicius, J. H. Jou, T. Y. Ting, "High efficiency low color temperature organic light emitted diode with solution processed emissive layer" *Annual meeting of Polymer Society*, Taichung, Taiwan (Jan. 2011).[**Poster**]

3. **Sudhir Kumar**, W. B. Wang, J. H. Jou, J. J. Shyue, S. Z. Chen, "Functionalized polymeric nano dots enhanced highly efficient organic light emitting diode" *UK-TW COOPM-2011*, Hsinchu, Taiwan (June 2011). [**Poster**]

4. **Sudhir Kumar**, S. M. Shen, S. H. Chen, C. C. Wang, C. C. Chen, J. H. Jou, "High efficiency very low color temperature phosphorescent organic light emitting diodes" *ICEOS 2012*, Coimbatore, India (Feb. 2012). [**Talk**]

5. J. H. Jou, W. B. Wang, S. M. Shen, **Sudhir Kumar**, D. Tavgeniene, R. Griniene, R. Zostautiene, S. Grigalevicius, "New polymeric hosts for high efficiency blue organic light emitting diodes" LOPE-C 2012, Munchen, Germany (June 2012). [**Talk**]

6. **Sudhir Kumar**, Y. C. Jou, C. C. Wang, C. C. Chen, J. H. Jou, "Electron transporting materials effect on the efficiency of a phosphorescent yellow organic light emitting diode" *ICFPE-2012*, Tokyo, Japan (Spet. 2012). [**Talk**]

7. **Sudhir Kumar**, J. H. Jou, P. W. Chen, C. C. Chen, C. C. Wang, "Organic light emitting diodes-based physiologically-friendly color temperature tunable lighting" ICMS-2013, Agartala (Tripura University) India (Feb. 2013). [**Talk**]

8. **Sudhir Kumar**, J. H. Jou, C. T. Chen, W. S. Chao, High efficiency yellow OLEDs using a green light emitting electron transporting material, ISNA15-2013, Taipei, Taiwan (27 Jul.-2 Aug. 2013) **[Poster**]

9. **Sudhir Kumar**, J. H. Jou, S. H. Chen, C. C. Chen, C. C. Wang, A physiologically-friendly color-temperature tunable organic light emitting diode for illumination, IDMC-2013, Taipei, Taiwan (27-30 Aug. 2013). [**Poster**]

10. **Sudhir Kumar**, J. H. Jou, C. Y. Hsieh, Y. C. Jou, J. R. Tseng, An energy efficient and high color rendering index candle light-style organic light emitting diode for illumination, IWPSD-2013, Noida, India (7-13 Dec. 2013). [**Talk**]

11. **Sudhir Kumar**, J. H. Jou, Y. L. Chen, Y. M. Yang, Effect of electron transporting materials on the efficiency of yellow OLEDs, ICMAP-2013, Dhanbad, India (13-15 Dec. 2013). [**Talk**]

12. J.-H. Jou, **Sudhir Kumar**, H.-H. Yu, K.-Y. Chou, C.-Y. Hsieh, C.-F. Sung, Enabling a blue-hazard free general lighting based on candle light-style OLED, *OSA Technical Digest.* 2014, Canberra, Australia (02-05 Dec. 2014) [**Invited talk**]

13. P.-H. Feng, **Sudhir Kumar**, J.-H. Jou, Wet-process feasible novel carbazole-type molecular host for high efficiency phosphorescent organic light emitting diodes, *Annual meeting of Polymer Society*, Taichung, Taiwan (30-31 Jan. 2015).[**Poster**]

14. J.-H. Jou, **Sudhir Kumar**, C.-C. An, S.-H. Chen, S.-H. Shih, S.-C. Lin, Enabling a low circadian rhythm impact lighting on basis of candle light giving OLEDs, *Display Week SID-2015*, San Jose, California (USA). [**Talk**]

15. **Sudhir Kumar**, J.-H. Jou, A. Venkateswararao, K. R. J. Thomas, J.-J. Shyue, "Novel electro-fluorescent emitter for highly efficient deep-blue organic light-emitting diodes" *IDMC-2015*, Taipei, Taiwan (25-28 Aug. 2015). [**Talk**](Accepted)

16. M. Singh, **Sudhir Kumar**, J.-H. Jou, "Blue-hazard free candle light-style OLED with fluorescent tube efficacy" *ICFPE-2015*, Taipei, Taiwan (21-23 Oct. 2015).[**Poster** Accepted]

17. S. Sahoo, **Sudhir Kumar**, D. Tavgeniene, S. Grigalevicius, J.-H. Jou, "Enabling high efficiency phosphorescent OLEDs using solution-process feasible molecular host", *ICFPE-2015*, Taipei, Taiwan (21-23 Oct. 2015).[**Poster** Accepted]

18. H. C. Tsai, **Sudhir Kumar**, J. H. Jou, Enabling a blue-hazard free general lighting based on candle light-style organic light emitting diode, TACT 2015 International Thin Films Conference, NCKU, Tainan, Taiwan (15-18 Nov. 2015).[**Poster** Accepted]