1. Name and Photograph : **Dr Rakesh Kumar**

2. Designation and complete address including email id: **Senior Principal Scientist, Prof. AcSIR & HoD, Rigid Pavement Division, CSIR-CRRI, Mathura Road, New Delhi -110025.**
   Email: ***rakeshkumar.crri@nic.in***

3. Areas of Interest: Design, repair & rehabilitation, prevention of premature distresses and increasing durability of cement concrete roads and road infrastructures, Utilization of industrial and post-consumer by-product materials for greener and sustainable climate resilience concrete roads.

4. Educational Qualification – starting from the highest degree

Sl. No.	Degree/Certificate	Year of Passing	University/Institute	Subjects
1.	Ph.D.	1997*	Indian Institute of Technology (IIT), Delhi	Civil Engineering
2.	B.E. (Civil Engineering)	1989	MIT Muzaffar Pur University of Bihar	Civil Engineering

*Thesis submitted and Degree was awarded in 1998.

5. Professional Experience - in reverse chronological order

Sl. No.	From	To	Name of Organization	Position held
1.	26 Sep. 2014	Till Date	**CSIR- CRRI Delhi**	**Sr. Principal Scientist**
2.	26 Sep.2009	25 Sep.2014	**CSIR- CRRI Delhi**	**Principal Scientist**
3.	Nov. 2008	Sept 2009	**UW-M, USA**	Post-Doctoral Research Fellow
4.	26 Sep. 2005	25 Sep. 2009	**CSIR- CRRI Delhi**	Scientist- EI
5.	Nov.2002	April 2003	**UW-M, USA**	**Post-Doctoral Research Associate**
6.	26 Sep. 2001	25 Sep. 2005	**CSIR- CRRI Delhi**	Scientist- C
7.	May 2001	Oct.2001	**UW-M, USA**	**Post-Doctoral Research Associate**
8.	26 Sep.1997	25 Sep. 2001	**CSIR- CRRI Delhi**	Scientist- B
9.	May 1997	Aug. 1997	**CRC Delhi**	Engineer

10.	Jan 1993	Apl 1997	**IIT Delhi**	Research for Ph.D.

6. Membership to Professional Bodies:

* The Indian Science Congress Association

* The Indian Concrete Institute

*Member of BIS, ISO/TC 71 & ISO/TC 74, CED 2/P1 , CED 5

* Indian Road Congress (IRC), H-9

* Indian Geotechnical Society (IGS)

*Indian Society for Construction Materials & Structures

7. Achievements

a. Awards

11th CIDC Vishwakarma Award, 2019

b. **Hounors**

- **Co-**chairman of a technical session of 14th NCB International Seminar on Cement and Building Materials, 1-4 December, 2015, India.
- Member of Building and Works Committee of **IIT Indore**, 2016-2019.
- **Independent Reviewer** for American Concrete Institute (ACI) Committee 232 "**Report on the Use of Fly Ash in Concrete" (ACI 232.2R), USA, 2015.**
- Chairman of technical session of 3nd International Conferences on Sustainable Construction and Material Technology (**SCMT3)** held on August 18-21, 2013 at **Kyoto Japan.**
- **Editor of Journal** of Sustainable Construction Materials and Technologies, **Turkey**, 2014.
- Reviewer of Draft of **PWD Handbook Chapter** of Self-compacting Concrete, for Chief Engineer & Chairman Concrete Handbook Chapter Committee Maharastra, Maharstra Engineering Training Academy, Nasik, 2013.
- Member of ISO/TC 71 & ISO/TC 74, CED 2/P1, CED 5, of BIS committee **Concrete, Reinforced Concrete and Prestressed Concrete and Cement and Lime**
- **Member of BIS committee on Precast Concrete Paver Blocks – Specification, Redraft the code 7958.**
- Session-Co-chairman of a technical session of International Conference on Trends and Challenges in concrete Structures, Gaziabad, December, 2013.

- A member of **student research committee** at department of civil engineering **IIT Delhi**, 2012-13.

- Member of Infrastructural Development Committee (IDC) of National Council for Cement and Building Materials (NCCBM), Ballabhgarh.

- **Chairman** of one of the technical sessions of 2nd International Conferences on Sustainable Construction and Material Technology **(SCMT2) held on 28-30 June 2010, at Ancona Italy.**

Post-doctoral Research Fellow of UW-M, USA on three occasions

*Nov.2008-Sept.2009
*Nov.2002- April 2003 and
*May 2001 to October 2001

- CSIR-CRRI Award for the maximum number of research publication in SCI Journals in one calendar year

C. Research & Development Projects –

- **Development of magnesium oxychloride (MOCL) based repair material for cement concrete roads (18-19)**
- Development of Technology for Compensating Strength Loss in Paving Concrete due to Use of Aggregate from C&D Debris (2015-16).

- A Comprehensive Performance study on Hybrid Fiber Reinforced Concrete for the construction of Concrete Pavements

- Evaluation of GUJCON - CRF Nylon-6 fibre reinforced M40 concrete for roads, **GSFCL, 2015.**

- A study on multifilament PPF vis-à-vis wollastonite mineral fibre for the use in construction of rigid pavements, (2014-15).

- Study on Suitability of Synthetics Fibers Reinforced Concrete For Construction Of Concrete Pavements In Indian Conditions (2012-14)

- A study on dry lean concrete (DLC) containing portland pozzolana cement (2011-12).

- An investigation on the relationship between surface to surface (in-direct) and direct transmission mode of ultrasonic pulse velocity through concrete member (2008).

- Development of High-Volume Fly Ash Concrete for practical uses (2004-05)

- Development of Self-compacting concrete for bridges (2004-05).

- Development of self-health monitoring smart concrete (2002-2007) Network Project CBRI.

- High-Performance Concrete i.e. Preparation of specification for usage of High-performance concrete in pavements and bridges using indigenously available material, sponsored by Ministry Of Surface Transport, Govt. of India.

- Engineering behavior of pond ash reinforcement with randomly oriented discrete synthetic fibres (1999-2000)

- Potential of cement kiln dust for stabilization of fly ash (2000-01)

- Strength and permeation quality of concrete through mercury intrusion porosimetry (1992-97)

C. **Research Publications**:

Journal papers.

1. Rakesh Kumar (2019). "Repair of Scaled Surface Areas of Newly Constructed Cement Concrete Pavement". New Building Material & Construction World, 24, 70-78. ISSN 0973-0591.

2. **Rakesh Kumar (2018). "**Influence of surface scaling on the performance of cement concrete roads." New Building Material & Construction World, 23, 102-108. ISSN 0973-0591.

3. Rakesh Kumar (2017). "Influence of recycled coarse aggregate derived from construction &demolition waste (CDW) on abrasion resistance of pavement concrete." Construction and Building Materials, Vol.142, 2017, pp. 248-255, **(SCI, IF: 4.046)**.

4. Vasu Krishna & Rakesh Kumar (2017). " Emerging sustainable practices in highway pavements construction." New Building Materials & Construction World, Vol. 23, Sept 2017 pp. 48-57.

5. Rakesh Kumar **(2016)**. **'**A comparative study on dry lean concrete manufactured with ordinary portland cement vis-a-vis portland pozzolana cement to be used for the construction of concrete roads', *The Indian Concrete Journal*, Vol.90, No.2, pp. 70-76.

6. Vasu Krishna and Rakesh Kumar **(2015).** Emerging sustainable practices in highway pavements construction**. Under Review** in the Indian Road Congress (**IRC**) Journal.

7. Pankaj Goe,l Rakesh Kumar, and B. Bhattacharjee **(2015)**. 'Performance of synthetic fibre reinforced concrete in the construction of concrete pavements'**,** *The Indian Concrete Journal,* Vol.89, No. 4, pp.52-61**.**

8. Rakesh Kumar**,** Pankaj Goel, Renu Mathur, and B. Bhattacharjee **(2014)**. "Suitability of synthetic fibre for the construction of pavements." *Journal of Scientific and Industrial Research, Vol. 73, (7), pp. 448-452, **(SCI, IF:0.534).***

9. Rakesh Kumar and Tarun R. Naik **(2014)**, 'Greener concrete using post-consumer products', *The Indian Concrete Journal*, Vol. 88, No.4, pp. 16-28.

10. Panjaj Goel, Rakesh Kumar, Biswajeet Bhattacharjee, and Renu Mathur, **(2014),** 'Performance of concrete containing polypropylene multifilament fibre vis-à-vis fibrillated fibre', *The Indian Concrete Journal*, Vol. 88, No.6, pp.16-24**.**
11. Rakesh Kumar and Tarun R. Naik **(2014),** 'Greener concrete using industrial by-products', *The Indian Concrete Journal*, Vol. 88, No.4, pp. 29-40.
12. Pankaj Goel and Rakesh Kumar **(2014), '**Magnetized water an upcoming technology for construction industry', *New Building Materials and Construction World*, Vol. 19, Issue 12, pp.126-133.
13. Rakesh Kumar et al., **(2013)**, 'Manufacturing of dry lean concrete (DLC) using Portland pozzolana cement for the construction of concrete pavements', *New Building Materials and Construction World*, Vol. 19, Issue 4, pp.118-124.
14. Vasu Krishna and Rakesh Kumar (2013), 'Recycling cement concrete roads: an innovative advent to sustainability', *International Journal of Research in Engineering and Technology (IJRET,)* Vol. 2, No. 2, pp. 59-65.
15. A.K. Mishra, Renu Mathur, Rakesh Kumar, J.B.Sengupta and D. Ganvir, **(2013),** 'Distresses in cement concrete pavements - A case study', *Journal of Indian Roads Congress*, Vol.74, No.3, pp. 251-268.
16. Rakesh Kumar **(2013)**, 'Commonly used chemical admixtures in concrete', *New Building Materials and Construction World*, Vol.19, Issue 6, pp. 108-115.
17. Tarun R. Naik, Rakesh Kumar, Bruce. W. Ramme, and Fethullah Canpolat **(2012)**. "Development of high-strength economical self-consolidating Concrete." *International Journal of Construction and Building Materials***,** Vol.30, pp. 463-469, **(SCI, IF: 4.046)** .
18. Pankaj Goel, Rakesh Kumar and Renu Mathur, R. **(2012)**, 'An experimental study on concrete reinforced with fibrillated fiber', *Journal of Scientific and Industrial Research,* Vol. 71, (11), pp. 722-726, ***(SCI, IF:0.534).***
19. Rakesh Kumar and Renu Mathur **(2012**), 'Geopolymer concrete: opportunities, limitations and future needs.' *New Building Materials & Construction World*, Vol.18, Issue 11, pp. .
20. Tarun R Naik, Rudolph N. Kraus and Rakesh Kumar **(2011)**. "Influence of types of coarse aggregates on coefficient of thermal expansion of concrete." *ASCE Journal of Materials* in Civil Engineering, Vol.23, No.4, pp. 467-472, ***(SCI, IF:1.763).***
21. Rakesh Kumar and Renu Mathur **(2011**), 'White topping – An engineered economical long-lasting solution for distressed roads', New Building Materials and Construction World, Vol. 17, Issue 9, pp. 244-248.
22. Rakesh Kumar**,** Renu Mathur and A.K. Mishra. (**2011),** 'Opportunities & Challenges for Use of Nanotechnology in Cement-Based Materials', *New Building Materials_ and Construction World*, Vol. 17, Issue 8, 170-176.
23. Rakesh Kumar, Ram Kumar, and Narendra Kumar **(2009)**. "In-situ performance of self-compacting concrete in T-beams." *ASCE Journal of Materials in Civil Engineering***,** Vol.21, No.3, pp. 103-109, ***(SCI, IF:1.763).***
24. Rudolph R. Kraus, Tarun R. Naik, Bruce W. Ramme, and Rakesh Kumar **(2009)**,. "Use of foundry silica-dust in manufacturing economical self-consolidating concrete."

International Journal of Construction and Building Materials, Vol. 23, No. 11, pp.3439-3442, ***(SCI, IF:4.046)***.

25. Rakesh Kumar and Renu Mathur **(2008),** 'Conventional vis a vis mineral admixed concrete for cement concrete pavements construction', *New Building Materials and Construction World*, Vol. 5, No.9, pp. 15-19**.**
26. Rao, V.V.L.K. and Rakesh Kumar **(2007), '***Maturity of concrete and its uses in highway structures',* Indian Highway**,** pp 13-20**.**
27. Rakesh Kumar **(2006), '**A study on the effect of inadequate curing on the performance of concrete', *New Building Materials & Construction World***,** Vol 12, Issue 5, Nov 06.
28. Naik, T.R., Kraus, R.N. Ramme, B.W., Chun, Y-M. and Rakesh Kumar **(2006),** 'High-carbon fly ash in manufacturing conductive CLSM and concrete', *ASCE Journal of Materials in Civil Engineering*, Vol.18, No.6, pp. 743-746, ***(SCI, IF:1.763).***
29. Rakesh Kumar **(2005)**, 'Mechanical properties of concrete containing high-volume of fly ash', *The Indian Concrete Institute Journal***,** Vol.65, No.3, pp. 33-36.
30. Rakesh Kumar and Biswajeet Battacharjee **(2005**), 'Comparative study of three techniques for assessment of in-situ strength of concrete', *The Indian Concrete Journal*, Vol.79, No. 2, pp. 54-60..
31. Rakesh Kumar and Ram Kumar **(2005)**. 'Self-health monitoring concrete: Concrete of the future.' *The Indian Concrete Institute Journal*, Vol. 5, No.1, pp. 15-18.
32. Rakesh Kumar, Narendra Kumar, and Ram Kumar **(2005)**, 'Manufacturing cost of self-compacting concrete, conventional concrete and pumpable concrete of equal strength and its merits and demerits: A comparative study, Journal of CSIR, Vol.13, No.2, pp. 163-170.
33. Rakesh Kumar and Biswajeet Battacharjee. **(2004),** 'Assessment of permeation quality of concrete through mercury intrusion porosimetry', *Cement and Concrete Research*, Vol.34**,** No.2, pp. 321-328, ***(SCI, IF:5.618).***
34. Rakesh Kumar and Biswajeet Battacharjee **(2003),** 'Study on some factors affecting the results in the use of MIP method in concrete research', *Cement and Concrete Research*, Vol.33**,** No.3, pp.417-424, ***(SCI, IF:5.618).***
35. Rakesh Kumar and Biswajeet Battacharjee **(2003**), 'Strength porosity and pore size distribution of concrete', *Cement and Concrete Research***,** Vol.33, No.1, pp.155-164, ***(SCI, IF:5.618).***
36. Rakesh Kumar, Vijay K**.** Kanaujia and Alok Ranjan **(2002),** 'An experimental study on potential of cement kiln dust in stabilization of fly ash' *ASTM International Journal of Cement, Concrete and Aggregates,* Vol.24, No.1, pp. 25-27, ***(SCI, IF:0.518).***
37. Rakesh Kumar and M.V.B. Rao **(2002)**, 'Self-compacting concrete: An emerging technology in construction industry', *The Indian Concrete Institute Journal*, Vol. 3, No.2, pp. 9-12.
38. Rakesh Kumar and Biswajeet Battacharjee **(2002)**, 'Correlation between initial surface absorption rate of water and in-situ strength of concrete', *The Indian Concrete Journal*, Vo.76, No.4, pp.231-235.

39. Rakesh Kumar, Vijay K Kanaujia, and Deep Chandra **(1999)**, 'Engineering behavior of fibre reinforced pond ash vis-avis silty sand', *Geosynthetics International***,** Vol.6, No.6, pp.509-518, ***(SCI, IF:2.04).***

40. Amamul I. Laskar,, Rakesh Kumar and Biswajeet Battacharjee **(1997)**, 'Some aspects of evaluation of concrete through mercury intrusion porosimetry', *Cement and Concrete Research***,** Vol.27, No.1, pp.93-105, ***(SCI, IF:5.618).***

d) Conference papers

41. Rakesh Kumar, (2019). "Mechanical properties, shrinkage, abrasion resistance and carbonation of concrete containing recycled coarse aggregate of different size range", *Proceedings of 5th International Conference on Sustainable Construction Materials and Technology*, London, UK, July 14-17, 2019, Vol.1, pp. 97-107, **ISBN-10:** 1078314438**.**

42. Rakesh Kumar (2019). "Scaling Problem on Surface of Newly Constructed Concrete Pavement and Its Repair ", Proceedings, International Seminar on Construction and Rehabilitation of Rigid Pavement - Current Practice and Way Forward, January 18-19, 2019, New Delhi , on a Pen Drive

43. Rakesh Kumar and Pankaj Goel (2017). "A study on influences of polyester, polypropylene (pp) multifilament and fibrillated fiber on a paving concrete." International Conference on Innovations in Concrete for Infrastructure Challenges Nagpur, ICI Centre of Nagpur, India October 6-7, 2017, on a CD.

44. Rakesh Kumar **(2016), '**Wollastonite Mineral Fibre in Manufacturing of an Economical Pavement Concrete', Accepted for *Proceedings of International Conference on Sustainable Construction Materials and Technology*, Las Vegas, USA, Aug-7-11, 2016.

45. Rakesh Kumar **and Tarun R.** Naik **(2016), '**Utilization of Post-consumer Plastics in Sustainable Concrete: An Overview', Accepted for *Proceedings of International Conference on Sustainable Construction Materials and Technology*, Las Vegas, USA Aug-7-11, 2016..

46. Rakesh Kumar and Vasu Krishna **(2016)**, **'**Water Cement Ratio: A si,mple and emphatic approach to detract plastic and drying shrinkage in Concrete', Accepted for *Proceedings of International Conference on Sustainable Construction Materials and Technology*, Las Vegas, USA, Aug-7-11, 2016..

47. Tarun R. Naik, Rakesh **Kumar** and G. Moriconi (2015), 'Greener concrete using post-consumer products' the proceedings of *ACI International Workshop on Durability and Sustainability of Concrete Structures*, Bolonga, Italy, from 1-3 October 2015, ACI SP-305-42, 42.1-42.10.

48. Ishan Sinha and Rakesh Kumar (2015), 'Experimental study on commercially available recycled aggregate from construction & demolition debris', *Proceeding of New Developments in Use of Alternative Materials for Concrete (AMCON- 2015)*, 13-14 March 2015, Nagpur, India.

49. Rakesh Kumar, Pankaj Goel, Renu Mathur and Bishwajeet Bhattacharjee (2013), **'**A laboratory study on the uses of synthetic fiber in concrete pavements', ***P****roceedings of ICI International Conference on Trends and Challenges in Concrete Structures*, pp. 311-320, Ghazibad, 19-21 Dec 2013.

50. Rakesh Kumar and Vasu Krishna **(2013)**, 'Importance of water cement ratio: an effective approach to prevent plastic shrinkage and mitigate drying shrinkage', *Proceedings of R N Raikar Memorial ACI International Conference Mumbai,* Vol. 2, pp. 427-431.

51. Rakesh Kumar**,** Pankaj Goel and Renu Mathur **(2013)**, 'Suitability of concrete reinforced with synthetic fiber for the construction of pavements', *Proceedings of the SCMT 3, International Conference on Sustainable Construction Materials & Technologies*, 18-21 August 2013, at Kyoto Japan.

52. Vasu Krishna and Rakesh Kumar **(2013)**, 'Recycling cement concrete pavements for greener construction: an approach towards sustainable development', *Proceedings of the National Seminar on Application of Geomembrane and Green Civil Engineering Construction*, Feb 26-27, 2013 at BIT Meerut, pp.165-174.

53. Rakesh Kumar **(2012)**, 'Global warming and sustainable cement concrete based infrastructures', *the Proceedings of the 28th NCCE and National Seminar* held at Roorkee, October 2012**,** pp. 133-139.

54. Rakesh Kumar**,** Pankaj Goel and Renu Mathur **(2012), '**Conventional vis-à-vis synthetic fibre reinforced concrete for the construction of rigid pavements*', Proceedings of International Conference on FIBCON 2012*, Nagpur, India, on a C.D.

55. Rakesh Kumarl and Renu Mathur **(2010),** 'Opportunity & Challenges of Nanotechnology in Cement-Based Materials', *Proceedings of Indo – US Workshop on Nanotechnology in science of Concrete, Roorkee*, India, on a C.D.

56. Tarun R. Naik and Rakesh Kumar **(2010)**,'Carbonation: An Efficient, and Economical Process for CO_2 Sequestration. *Proceedings of International Conference on Sustainable Construction Materials and Technology*, Ancona, Italy, pp.1851-1862.

57. Rakesh Kumar and Tarun R. Naik. **(2010)**, 'Sustainable Concrete with Industrial and Post-Consumer By-Products', *Proceedings of International Conference on Sustainable Construction Materials and Technology*, Ancona, Italy, pp.1899-1910.

58. Tarun R. Naik, Rakesh Kumar, and Kraus N. Rudolph **(2010)**, 'CO2 Sequestration in Non-air Entrained Concrete', *Proceedings of International Conference on Sustainable Construction Materials and Technology*, Ancona, Italy, pp.1887-1898.

59. Tarun R. Naik, Rakesh Kumar, Bruce W. Ramme,and Kraus, N.Rudolf **(**2010**),** 'Effect of High-Carbon Fly Ash on the Electrical Resistivity of Fly Ash Concrete Containing Carbon Fibers', *Proceedings of International Conference on Sustainable Construction Materials and Technology*, Ancona, Italy, pp.1875-1886.

60. Tarun R. Naik Rakesh Kumar**,** Yoon-Moon Chun and Kraus N. Rudolph **(2010)**, 'Utilization of Powdered Gypsum-Wallboard in Concrete', *Proceedings of International Conference on Sustainable Construction Materials and Technology*, Ancona, Italy, pp.1863-1872.

61. Rakesh Kumar and Ram Kumar **(2007),** 'Relative performance of self-compacting concrete and conventional concrete of similar strength in T-beams', *Proceedings of the 2nd International Symposium on Structural Engineering World Congress*, Banglore, India pp. 323-332.

62. Rakesh Kumar and Ram Kumar **(2005)**, 'Manufacturing cost of structural grade high-volume fly ash concrete', *Proceedings of the 2nd International Symposium on Concrete Technology for Sustainable Development with Emphasis on Infrastructure*, Hyderabad, India pp. 323-332.

63. Rakesh Kumar and Ram Kumar **(2005)**, 'Manufacturing cost of self-compacting concrete, conventional concrete, and pumpable concrete of the similar compressive strength', *Proceedings of International Conference on Advances in Concrete Composites and Structures ICACS-2005*, Chennai, India pp. 485-492.

64. Rakesh Kumar and Ram Kumar **(2004)**, 'A silent revolution in concrete technology: its advantages and disadvantages', '*Proceedings of ICFRC International Conference on Fibre Composites' High-Performance Concrete and Smart Materials.* Chennai, India pp. 815-824.

65. Tarun R. Naik, Bruce W. Ramme, Kraus, N. Rudolf and Rakesh Kumar **(2004),** 'Use of high-carbon fly ash in manufacturing of conductive CLSM and concrete', *Proceedings of the Eighth CANMET/ACI International Conference on Fly Ash, Silica Fume, Slag, and Natural Pozzolans in Concrete*, Las Vegas, USA, pp.230-238.

66. Rakesh Kumar, Ram Kumar and Rao, M.V.B. **(2003)**, 'Innovative non-conventional materials for cement concrete roads', *Proceeding of National Conference on Modern Cement Concrete and Bituminous Roads*, Visakhapatnam, pp.235-243.

67. Tarun R. Naik and Rakesh Kumar **(2002)**, 'Strength and durability of high-performance concrete subjected to simulated summer weather construction', *Proceedings of Third International Congress on High-performance Concrete, Racife, Brazil.*

68. Tarun R. Naik Kraus, N. Rudolf and Rakesh Kumar. **(2001)**, 'Wood ash: a new source of pozzolanic material', *Proceedings of ACI Maharastra Chapter,* Mumbai, India.

69. Rakesh Kumar, Vijay K. Kanaujia and Deep Chandra, **(2001)**, 'Laboratory investigation on pond ash reinforced with polyester fibers', *Proceedings of 2nd International Conference On Fly ash disposal and Utilization*, New Delhi, India, pp.VII-1-5.

70. Rakesh Kumar and Bishwajeet Bhattacharjee, **(2001)**, 'Mercury intrusion porosimetry: A technique to study durability of concrete', *Proceedings of 7th NCB International Seminar on Cement and Building Materials,* New Delhi, India.

71. Rakesh Kumar and Deep Chandra. (2000), 'Environmental deterioration due to emission of coal based thermal power plants', *Proceedings Of the International Conference on Environmental Challenges for the New Millennium,* New Delhi, India, pp.115-120.

72. Rakesh Kumar and Promod K. Sikdar (1998), 'Effect of fly ash on pore size distribution of concrete', *Proceedings of National Seminar on Buildings and structures*, Chennai, India, pp.275-279.

73. Rakesh Kumar and Bishwajeet Bhattacharjee, (1996), 'Performance of concrete through pore size distribution of concrete', *Proceedings. Of the International Conference on New Challenges for Civil Engineers of Developing Countries in 21st Century*, New Delhi, India, pp.181-186.

74. Rakesh Kumar and Bishwajeet Bhattacharjee,. (1995), 'Systematic assessment of the extent of damage and residual strength of fire affected building structures', *Proceedings, of the National Conference, on Civil Engineering Materials and Structures*, Hyderabad, India, pp.476-487.

e) Any Other information – whatever you feel should be displayed on the website (like courses conducted, lectures delivered outside, keynote speech, member of editorial boards, etc. etc.)

Books and Book Chapters

1. "**Recycled Materials for Use in the Concrete Industry**" (2013). Authored by T. R. Naik and Rakesh Kumar, publisher Create Space, 18 August 2013**. ISBN-13:** 978-1500416539.

2. **"Global Warming and Cement Based Materials"** (2012)**.** Authored by T. R. Naik and Rakesh Kumar, publisher Create Space, 12 March 2012, **ISBN-13:** 978-1475029505.

Book Chapter:
Chapter -12 "Sustainable Concrete with Industrial and Postconsumer By-Product Materials". *By Tarun R. Naik and Rakesh Kumar for book titled "***Green Building with Concrete: Sustainable Design and Construction, Second Edition" Edited by Gajanan M. Sabnis, publisher** Taylor & Francis Group, NY 2015.

- **Workshop Organized**:
  1. UWM-CBU Workshop and Field Demonstration for Use of Flowable Slurry Containing Coal Ash, Fine Crushed Sand, and other Recyclable Materials, *Organized by Center for By-Product Utilization, University of Wisconsin-Milwaukee, USA*, June 2001, Rockford, Illinois, USA.
  2. UWM-CBU Workshop and Field Demonstration for Use of Flowable Slurry Containing Coal Ash, Fine Crushed Sand, and other Recyclable Materials, *Organized by Center for By-Product Utilization, University of Wisconsin-Milwaukee, USA*, August 2001, Peoria, Illinois, USA.
  3. UWM-CBU Workshop and Field Demonstration for Use of Flowable Slurry and Concrete Containing Wood Ash, *Organized by Center for By-Product Utilization, University of Wisconsin-Milwaukee, USA, October 2001, Rothschild, Wisconsin, USA*.

Country Visited: USA, Japan, Italy