

1. Name and Photograph: Dr Rajeev Kumar Garg



2. Designation and complete address including email id.

Senior Principal Scientist, Bridges and Structures, and Professor at AcSIR,
CSIR-Central Road Research Institute, Mathura Road, New Delhi –110025.
Phone No. : 011-26314424; Mobile No. : 9868111558, FAX: 011-26830480.
Email: rajeev.rrri@nic.in and rkgerri@gmail.com

3. Areas of Interest

Structural health monitoring, Structural Dynamics & disaster resistant structures
(wind & earthquake), Bridges rating & rehabilitation.

4. Educational Qualification – starting from the highest degree

Sl. No.	Degree/ Certificate	Year of passing	University/Institute	Subjects
1	Ph.D.	1997	I.I.T. Delhi	Wind Engineering
2	M. Tech.	1987	I.I.T. Madras	Engineering Mechanics
3	B. Tech.	1985	G.B.Pant Univ. of Agri. & Tech., Pant Nagar	Civil Engineering
4	B.Sc.(Hons.)	1981	DN College, Meerut (Ch.Ch.Univ, Meerut)	Phy., Chem., Maths.

5. Professional Experience - in reverse chronological order

Sl. No	From	To	Name of Organisation	Position held
1.	Sep. 2008	Till date	CSIR-Central Road Research Institute, Mathura Road, New Delhi	Sr. Principal Scientist
2.	2001	2008	CSIR-Central Road Research Institute, Mathura Road, New Delhi	Scientist “E2”/
3.	1997	2001	CSIR-Central Road Research Institute, Mathura Road, New Delhi	Scientist “E1” / Sr. Scientist
4.	1992	1997	Structural Engineering Research Center, Ghaziabad	Scientist “C”
5.	Sep., 1987	Sep. 1992	Structural Engineering Research Center, Ghaziabad	Scientist “B”

6. Membership to Professional Bodies

- *Member, Mechanization and Instrumentation Committee (G4), Indian Roads Congress, (2015-2017).*
- *Member, Special Structures Sectional Committee CED38, Bureau of Indian Standards, (2012-2017).*
- *Member Secretary, Instrumentation Committee (G5), Indian Roads Congress, (2006-2008 and 2009-2011, 2012-2015).*
- *Member, Maintenance and Rehabilitation Committee - B8. Indian Roads Congress (2005-08).*
- *Member, Executive Committee of Indian Society for Wind Engg. (ISWE) for two terms (2002-06).*
- *Member, International Centre for Urban Safety Engineering (a society) (ICUS/ INCEDE), The University of Tokyo, Tokyo.*
- **Life member** of various technical societies in professional field namely,
 - Institution of Engineers (I),
 - Indian Society for Wind Engineering (ISWE),
 - Indian Concrete Institute (ICI),
 - Indian Society for Earthquake Technology (ISET),
 - Computer Society of India (CSI),
 - Aeronautical Society of India (AeSI),
 - The Society of Power Engineers (SPE),
 - Indian Society for Construction Material & Structures (ISCMS),
 - Indian Geo-technical Society (Delhi Chapter),
 - Indian Roads Congress,
 - Indian Institution of Bridge Engineers

7. Achievements

a. Honours and Awards

- CSIR-DAAD fellowship to carry out R&D work in the field of Wind Engineering at Ruhr University, Bochum, Germany from June, 1992 to Sep. 1994.
- Commendation Certificate from IRC for outstanding Performance as Member-Secretary, Instrumentation Committee (G-5) for Jan 2009 to Dec 2011.
- (Nominated for) CSIR-*Technology award for physical sciences including engineering (multidisciplinary) for 2015*: title of development: Vehicle mounted automatic controlled mobile bridge inspection device (MBIU).

b. Research Projects – in three groups

Participation in the “R&D activities” of the Laboratory/Institute/CSIR		
Title of Project	Project Category	Role in Project
Development of Management System for Maintenance Planning and Budgeting of High Speed Road Corridors. (Completed)	SIP30 11 FYP- (CRR)	Sub-module Leader & Team member
Innovative Technologies for Health Assessment and Damage Mitigation of Structures (I-HEAL). (Ongoing)	12 FYP- ESC-0110 (SERC)	Activity Leader (T5.6), Alternate nominee for Task Force Committee
Development of Robot for Underwater Inspection and Damage Detection of Bridges (UnWAR)	12 FYP- ESC-0113	Team Member

(Ongoing)		(CMERI)	
Seismic Resistant Design of bridges- Comparative study of codal provisions (Completed)		In-house R&D OLP2302	Project Leader
Seismic resistant design of bridges: Performance of concrete bridges under seismic forces (Completed)		In-house R&D OLP0401	Project Leader
Upgradation of R&D and testing facilities in the area of Bridges and Structural Engineering. (Completed)		In-house Capability OLP477	Prepared specifications and processed for procurement of vibration / accelerometers and associated components.
Participation in the R&D activities, sponsored by other Govt. Organizations			
Title of the Project		Sponsoring Agency	Role in Project
Distress diagnostic, performance evaluation and bridge management system for concrete bridges, GAP 4413, (Completed)		DST/TSG/STS/2004/50	CO-PI and PI (Later)
Development of Critical Infrastructure Information System in GIS Environment for Maintenance of Bridges on National & State Highways. GAP 4456. (Completed)		DST/TSG/STS/2005/7	Team member
Development of Mobile Bridge Inspection Unit (Jointly with CSIR-CMERI-MERADO, Ludhiana) GAP 4470. (Completed)		DST/TSG/STS/2006/76	PI/ Project Leader
Construction of Roads In Cyclone Prone Areas. (Completed)		NDMA, Delhi	Contributed one chapter on bridges
Development of Fiber Bragg Grating based Distributed Strain Sensor System for Concrete Bridges (Jointly with CSIO, Chandigarh) GAP 4492. (Completed)		DST (DST/TSG/NTS/2009/32)	Co-PI & Project Leader for CRR1
Intelligent Remote Health Monitoring (IRHM) for Bridge System (Jointly with SERC, Chennai). GAP 4539.(Ongoing)		DST DST/TSG/STS/2011/43 G	CoPI and PL for CRR1
Participation in the R&D activities, sponsored by Industry			
Title of the Project	Sponsoring Organization	Category Project	Role in project
Assessing Condition of Distressed Bridge at Kangsabati Bridge on NH6 (Completed May 2009),	ICT Pvt. Ltd., New Delhi	CLP1563	Project Leader
Evaluation of Bridges for Increase in Axle Load of Freight Wagons for South-Eastern Railway (Completed)	South-Eastern Railway	SSP 4461	Project Leader (for later half)
Evaluation of Bridges for Increase in Axle Load of Freight Wagons for West Central Railway-Bhojakho (Completed)	West Central Railway	SSP 4474	Project Leader
Evaluation of Bridges for Increase in Axle Load of Freight Wagons for Eastern Railway (Completed)	Eastern Railway	SSP 4467	Project Leader (for later half)
Study Of Vibrations Due to Movement Of Heavy Vehicular Traffic On The Munirka Flyover, Delhi (Completed)	Delhi PWD	CLP1819	Project Leader
Investigation for the use of Structural Steel Products in Transportation and Facility sector (Completed)	Nippon Steel & Sumitomo Metal Co., Japan	SSP-4518	Project Leader
Assurance of quality construction of	Delhi PWD	CLP-1918	Project Leader

corridor of elevated road on outer Ring Road from Madhuban Chowk to Mukarba Chowk, New Delhi (Ongoing)			
Assurance of quality construction of corridor of elevated road on outer Ring Road from Mangol Puri to Madhuban Chowk, New Delhi (Ongoing)	<i>Delhi PWD</i>	CLP-1919	Project Leader
Independent QA During Construction and Subsequent Performance Evaluation of Road and Bridges for Link Road Connecting NH-24 and NH-58 (Ongoing)	Ghaziabad Development Authority (GDA)	SSP-4521	Project Leader
Visual inspection of bridge at Janakpuri, Delhi (Completed)	<i>MCD-IV, Delhi</i>	TSP372	PL
Noise and vibration assessment at DMRC corridor (Completed May 2014)	DMRC	CLP1992	Co-Project Leader
Evaluation of Bridges for Increase in Axle Load of Freight Wagons for West Central Railway-at Rohari/ Ganjal/Kalisindh/ Northern Railway (Completed)	West Central Railway	SSP – 4473, 4475, 4476 4463	Team member
Quality assurance and instrumentation of road over Palam Drain, Dwarka, New Delhi (remaining part/ report finalisation/Completed)	<i>DDA</i>	CLP 1095	Team member
Distress diagnostics and rehabilitation measures for a PSC girder bridge on Maskararo river (Saharanpur) (Completed Mar 2012)	<i>UP PWD</i>	CLP 1792	Team member
Preliminary Investigation of Arch Bridge On Upper Gang Canal, Meerut (Completed)	<i>UP Irrigation</i>	CLP 1790	Team member
Proof Checking of Design And Drawing Of PSC Bridge Over River Hindon On NH58E (Completed)	<i>Ghaziabad Dev. Authority (GDA)</i>	CLP 1779	Team member
Quality Assurance Of PSC Bridge Over River Hindon On NH58E (Completed)	<i>GDA</i>	CLP 1780	Team member
Construction of RPS drain cover Khanpur (Completed)	<i>MCD</i>	TSP691	Team member
Quality audit of Lucknow –Muzaffarpur National Highway Project (LMNHP- 8 Contracts), NHA, (Completed Dec. 2012)	<i>NHA</i>	CLP 1825	Team member
Assurance of quality construction of bridges over Agra canal in Faridabad (Ongoing)	U.P. Irrigation.	CLP-1948	Team member
Partially Constructed Bridge near NTPC for field investigation (Completed)	U.P. Irrigation,	CLP-1900	Team member
Performance evaluation of protective surface coatings for cement concrete (Ongoing)	Wacker Silicones, Mumbai	SSP 4519	Team member

Design of Pedestrian Subway (Completed)		CLP 1959	Team member
Proof checking structural design pedestrian foot over bridge, PWD Delhi (Completed 2011)	TCPL, Delhi	CLP1659	Team member
Performance evaluation of the four spans of a grade separator and two spans of a ROB connecting National Highways 24 and 28 at Lucknow through load testing (Completed March 2009)	PWD, Lucknow	CLP 1540	Team member
Technical inspection of the ROB and RUB Road No.68 Nand Nagri, Delhi-93, under construction by the DTTDC (Completed)	DTTDC	CLP 1930	Team member
Detailed investigation of bridge over river Damodar -Burdwan (Krishak Setu) (Completed)	WB PWD	CLP 2068	Team member
Other small projects on bridge design & investigation (6 nos.) and material testing e.g. bearings, steel bars, bolts etc. CLP2025 -KrishakSetu/WBPWD/2014. CLP2032 -InvBridge/VOCPortT/.2014. CLP2038 - nsBridgeMathura/UPSBC/ 2014. CLP2055 - LoadTGangaAraCh/SPSingla/ 2015. TSP815 -Bearing/DMRC/4.2014. TSP845 -MSBolt/L&T/01.2015.	DMRC, UPSBC, L&T, SPSingla, WBPWD, VOC PortTrust	CLP/ TSP completed	Team member
Quality Assurance of Construction of structures of Inner Ring Road (Phase-I) from Kuberpur to Fatehabad road, Agra (Ongoing)	ADA	CLP 2045	Team member
Structural analysis, design and drawings of foot over bridge on Palam drain road Dwarka, New Delhi (Completed)	DDA	CLP 2039	Team member
Design of pedestrian subway (Completed, Feb 2014)	MES, New Delhi	CLP 1959	Team member
Aerodynamic studies of proposed 4-lane Cable Stayed Bridge over Burdwan yard (Completed)	CES	CLP 1833	Team member
Design of 6 lane single span bridge on Gurgaon canal Faridabad (Completed)	YWS, Irrigation, Faridabad	CLP1910	Team member

c. **Research Publications** (in two parts, Papers in Journals and papers in Conferences)

For journal papers.

- V.V.L. Kanta Rao, Lakshmy P. and Dr. Rajeev Garg. Case studies on corrosion testing in concrete structures, Theme Journal – Forensic Engineering in Developing Countries, Institute of Civil Engineers, London, UK.(Under review).
- Rajeev Kumar **Garg**, Rajesh Chak, Vinod R. Dahake, Ashwani Kumar and Abhijit Mahapatra . Structural and Functional Design of a Low Cost Vehicle Mounted Mobile Bridge Inspection Unit (MBIU). Journal Scientific & Ind. Res (R&D), (under review).
- R.K. Garg and Kahsif Q. Inqalabi. Assessment Of Seismic Vulnerability Of Mono-Pier Urban Bridge Under Liquefaction, The journal the Indian Group of IABSE. *The Bridge and Structural Engineer*, New Delhi. (under review).
- G.K. Sahu, **R.K. Garg** and Ram Kumar (2008). "Performance evaluation and rating of bridges under uncertain structural parameters using integrated load test" Journal Scientific & Ind. Res (R&D), (SCI journal) Vol. 67 (9), Pp. 703-707.
- **R.K. Garg** and K. K. Chaudhry (2007). "Wind Induced Flow-Field around Complex Shaped Buildings" in Indian Concrete Institute Journal, Vol. 8 (1), pp.33-41.
- **R.K. Garg**, Ram Kumar, G.K. Sahu and S. Garg (2006). "Sensors and Actuators for Bridge Management – Recent Trends" in The Bridge & Structural Engineer, ING-IABSE Journal. Vol. 36(2), pp. 1-21.
- Ram Kumar, G.K. Sahu, **R.K. Garg**, VV Rao and MVB Rao (2005). "Retrofitting of a three-span two-girder PSC bridge" in The Bridge & Structural Engineer, ING-IABSE Journal. Vol. 36(2), pp.45-50.
- Ram Kumar, **R.K. Garg**, G.K. Sahu, VV Rao and MVB Rao (2005). "Evaluation and rehabilitation of distressed PSC girder bridge" in Construction Journal of India (CJI), pp.45-50.
- R.K. **Garg**, S.P. Sharma, K.K. Chaudhry (1991). Simulation of Atmospheric Winds in Wind Tunnels: State of the Art. Jn. Aeronautical Society of India Nov. 1991, pp. 241-263.
- S.K.Agarwal, **R.K.Garg** & LakshmyP (1991). Wind Resistant design of Structures. Int. Jn. of Structures, Roorkee. 1991, Vol. 11 (1), pp. 55-95.
- K.K. Chaudhry & R.K. **Garg** (1993). Wind Pressure Distribution around the High Rise Building Curved in Plan. Jn. Structural Engineering, Madras. 1993 Vol.20, pp.129-134.
- S.K. Agarwal & R.K. **Garg** (1994). Wind Load Assessment on Free Standing Lattice Towers
- Jn. Inst. Of Engg. (I), Civil Engg. Nov. 1994, Vol. 75, pp.171-177.
- R.K. **Garg**, J.X. Lou, M. Kasperski (1997). Some Features of Modeling Spectral characteristics of Flow in Boundary Layer in Wind Tunnels. Jn. of Wind Engineering and Industrial Aerodynamics. Vol. 72, pp.1-12, 1997
- Ram Kumar, G.K. Sahu, R.K. **Garg**, VVLK Rao, MVB Rao (2004). Retrofitting of a three-span two-girder PSC bridge. The Bridge & Structural Engineer, ING-IABSE Journal. Vol. 34(4), Dec.2004, pp.57-70.
- R.K. **Garg** (1995). High Reynolds No. Simulation Tech. & Their Application to Circular Shaped Structures Model Test, by C. Barre and G Barnaud, Jn. W.E.I.A, Vol. 57, 1995 Jn. Wind Eng. Ind. Aero Vol. 57, 1995, pp. 145-158. in the same vol. pp. 416.
- R.K. **Garg** (1995). Wind Tunnel Study of an Oscillating Tall Building, by AAFediw et al, Jn. W. E. I.A, Vol. 57, 1995, pp. 249-160. Jn. Wind Eng. Ind. Aero, Vol. 57, 1995, in the same vol. pp.435.

In Conferences

Inqalabi, K.Q. and Garg, R.K. Seismic Vulnerability Assessment Of Typical Urban Bridges Under Liquefaction, 6th International Conference Recent Advances In Geotechnical Earthquake Engineering and Soil Dynamics August 1-6, 2016, IIT Roorkee, Greater Noida.

Rajeev Goel; P. Lakshmy; S.K. Sharma; R.K. Garg; G. K. Sahu; JK Goyal (2016), 'Development of Bridge Maintenance Management System in GIS Environment in India', To be published in the Proceedings of 2nd International Conference on 'Sustainable Construction Materials and Technologies', to be held at Las Vegas, USA during August 7-11, 2016 (Accepted).

Rajeev Goel, S.K. Sharma, J.K. Goyal, Lakshmy Parmeswaran; & Rajeev Garg (2016), 'A Case Study of Strengthening of Distressed Prestressed Concrete Box Girder Bridge', To be published in the Proceedings of 2nd International Conference on 'Sustainable Construction Materials and Technologies', to be held at Las Vegas, USA during August 7-11, 2016 (Accepted).

Kashif Quamar Inqalabi and Garg, R.K. (2015). Seismic Risk Assessment of Bridges as Part of a Transportation Network. TIFAC-IDRiM Conference, 28th–30th October 2015, New Delhi.

S.S. Gaharwar, Shraddha Sharma and R.K. **Garg** (2015). Use of construction and demolition waste (CDW) in concrete – a paradigm shift. Proc. BITCON 2015, Bhilai Institute of technology, Bhilai. Feb. 22-23.

शुभमय गंगोपाध्याय, राजीव शर्मा, रवीन्द्र लैले, राजीव पटेल, विनोद दहाके, फरहत आज़ाद, राजीव सेठी व राजीव कुमार गर्ग (2015). मोबाइल ब्रिज इन्सपैक्शन यूनिट का भारत में निर्माण की प्रगति समीक्षा.

सीएसआईआर- IICT-CCMB-NGRI organised Rashtriya Vaigyanik Sangoshthi- Make in India, 8-10, July at Hyderabad (Under print).

R.K. **Garg** (2015). "Application and Techniques of Instrumentation for Highway and Related Structures". Presentation on the SOAR before HRB, in 71st Indian Roads Congress Session at Bhubaneswar, 18 Jan.

V.V.L. Kanta Rao, Sushil Kumar, Lakshmy, P and R.K. **Garg** (2014). "A Laboratory Study on the Performance of Silane Based Hydrophobic Coatings on Concrete". Proc. 2nd Int. Conf. on Durability of Concrete (ICDC-2014), New Delhi, Paper No. 51.

R.K. **Garg** (2014). Development and Challenges in Managing Civil Infrastructures: Bridge Management system. (Key Note Lecture). 1st Int. Conf. on Innovative Advancements in Engineering & Tech. (IAET), 7-8, March, JNU Jaipur.

Umesh Tiwari, Rajeev **Garg**, M. Vishwakarma, Bhargav Das and R. Bhatnagar (2014). Strain Monitoring of Concrete Bridge using Fiber Bragg Grating Sensors, Paper No. T3A.74. Proc. Photonics, 12th Int. Conf on Fiber Opt. & Photonics, IIT Kharagpur, Dec.

Rajeev Goel, S.K. Sharma, Gk Sahu, Rajeev Kumar **Garg** and P. Lakshmy (2014). Application of Non-destructive Evaluation Techniques for Assessment of Present Condition of Concrete Bridges. Paper No.095. Proc. 9th ISEM'14, New Delhi. Nov. 1-4.

G K Sahu , Rajeev Kumar **Garg**, Rajeev Goel, J K Goyal ,Jangpangi L and Lakshmy P. (2014). Performance Monitoring of Bridges through Instrumentation. Paper No.096. Proc. 9th ISEM'14, New Delhi, Nov. 1-4.

Kashif Q.I. and R.K. **Garg** (2014). Seismic Risk assessment of Typical Urban Bridges. 15th Symposium Earthquake Engineering, IIT Roorkee. Dec. 11-13, Pp.1056-1070.

Ir'h'k dqekj, lq'khy dqekj ,oa jktho xxZ (2014). IM+d nq?kZVuk dks jksduk %/kS;Z] /;ku vkSj f'k"Vkpjk ds lkFk M°kbZfoax & voyksdu. Sadak Darpan (Magazine of CSIR-CRRI) Vol. 11, Pp. 16-22.

सुशील कुमार, राकेश कुमार, योगेंद्र कुमार एवं राजीव गर्ग (2014). ग्लोबल वार्मिंग (वैश्विक तापमान) और सीमेंट कंक्रीट संरचना. Sadak Darpan (Magazine of CSIR-CRRI) Vol. 11, Pp. 23-29.

G.K. Sahu, Rajeev Goel, VVL K Rao, R.K. **Garg** and Lakshmy P, (2013), "Health Monitoring of Six –Lane Roadway Over Palam Drains, Dwarka, New Delhi through Instrumentation", Proc. of Int. Conf. on Trends & Challenges in Concrete Structures, Dec. 19-21, Ghaziabad, pp 562-575.

Rajeev Goel, P Lakshmy, SK Sharma, Rajeev **Garg**, J.K. Goyal, GK Sahu (2013). "Development of Bridge Maintenance Management System in GIS Environment". Proc. 36th IABSE Symposium held at Kolkata, 24-27 Sep., pp.817-825.

Gaharwar S.S., **Garg** R.K. and Pandey R.K. (2013). "Opportunities and Challenges in the Execution of National Highway Projects on BOT Mode under DBFOT Pattern in India". Proc. Int. Seminar on Experience Gained in PPP Projects in Road Sector -The Way Forward, organized by IRC, India Habitat Centre, New Delhi, 11- 12 Nov.

S.S. Gaharwar, Rajeev Goel and R.K. **Garg** (2013). "Challenges of Quality Assurance in National Highway Projects being Executed on BOT Mode under DBFOT Pattern in India" Proc. Int. Conf. on Trends and Challenges In Concrete Structures, Organised by Indian Concrete Institute, at Ghaziabad/NCR

UK Tiwari, R.K. **Garg** and R. Bhatnagar (2013) "Distributed Strain Sensing of the Concrete Bridges Using FBG Sensors". Proc. Int. Conf. on Trends and Challenges In Concrete Structures, Organised by Indian Concrete Institute, at Ghaziabad/NCR Delhi, Dec. 19-21.

GK Sahu, Rajeev Goel, VVK Rao, RK **Garg** and P Lakshmy (2013), "Health Monitoring of Six-lane Roadway over Palam Drain Dwarka, New Delhi through Instrumentation". Paper No. 11503, Proc. Int. Conf. on Trends and Challenges In Concrete Structures, Indian Concrete Institute, at Ghaziabad/NCR Delhi, Dec. 19-21, pp.565-575.

योगेन्द्र कु सिंह, रा राणा, कुमार शशि भूषण, राजीव **गर्ग** (2012). पुलों एवं संरचनाओं के लिए नवीन सामग्री: रेशा प्रबलित बहुलक संयुक्त (एफ.आर.पी. कम्पोजिट) का उपयोग. Sadak Darpan, Vol 10, 2013.P 37-45.

कुमार शशि भूषण, योगेन्द्र कुमार सिंह, राजीव **गर्ग** (2012). वैज्ञानिक व अभियांत्रिकी अपशिष्ट, उनका निष्पादन व पुनः प्रयोग. Sadak Darpan, Vol 10, 2013.P 17-25.

Mansoor Khan, Umesh Tiwari, Nishtha Panwar, Ravi Dhawan, Subhash C. Jain, R. Bhatnagar Rajeev **Garg**, Pawan Kapur (2012). "Uniaxial Fiber Bragg Grating based Accelerometer". Proc. Conf.on Fibre Optics and Photonics Chennai, Dec. 9. Poster Session II (TPo 29),.pp.795-800.

N. Panwar, U. Tiwari, N. Chandel, M. Khan, S. C. Jain, R. **Garg**, P. Kapur, (2012). "Long Period Fiber Grating Humidity Sensor with Gelatin/Cobalt Chloride Coating". Proc. Int. Conf. on Fibre Optics and Photonics, Chennai, Dec.9, Optical Fiber Devices & Sensors IV (Paper No. W2B.4).

Rajeev Goel, R.K.**Garg**, Lakshmy P, Ram Kumar (2010). "Assessment of Residual Life of Existing RCC bridges". Proc. Codes in Structural Engineers- Developments and Needs for International Practice" at Croatia, May, 3-5.

राजीव कुमार **गर्ग**, एस के शर्मा, लक्ष्मी परमेश्वरन (2010) "रेशा प्रबलित प्लास्टिक (एफआरपी) का सेतू निर्माण, मरम्मत व जीर्णोद्धार में प्रयोग". राष्ट्रीय संगोष्ठी -2010, निर्माण समिग्रियाँ : विजन 2030 सीआरआरआई-सीबीआरआई, नई दिल्ली, मई 12-13.

राजीव कुमार **गर्ग**, दिनेश चंद्र शर्मा, लक्ष्मी परमेश्वरन, एस गंगोपाध्याय (2010) "भारतीय राजमार्ग व सेतू की संरचनात्मक स्वास्थ्य, सामिग्री क्षरण व रख रखाव में संवेदक व यांत्रिकी के नये आयाम" राष्ट्रीय संगोष्ठी - निर्माण समिग्रियाँ : विजन 2030 सीआरआरआई-सीबीआरआई, नई दिल्ली, मई 12-13.

Rajeev Goel, R.K. **Garg**, P Lakshmy and Ram Kumar (2010). "Assessment Of Residual Life Of Existing RCC Bridges". Proc. Intl. Conf. IABSE, Zagreb., pp. 48-55.

Rajeev Goel, R.K. **Garg** and Ram Kumar (2009). "Assessment Of Present And Future Rating of Existing RCC Bridges". Proc. ACSGE-2009 at BITS Pilani, pp. 48-55.

R.K.**Garg**, Ram Kumar and Parimal Godse (2008). "Seismic Performance Study of Typical Short and Medium Span Bridges in Urban Area Using Non-Linear Static Analysis". Proc. Int. Sem. on Latest Trends in Construction of Bridges, IIBE, New Delhi, 22-23, Oct., pp. 48-55.

R.K. **Garg** and Rajeev Goel (2007), "Nonlinear study of towers in cyclonic wind region". Proc. IV National Conf. Wind Engg., SERC, Chennai, Nov., Pp. 367-372.

KK Chaudhry and R.K. **Garg** (2006), "Wind Induced Flow-Field Study for Designing a Cruciform Shaped Building". Proc. Third Nat. Conf. on Wind Eng., ISWE & Jadavpur Univ., Jan., pp. 414-421.

R.K. **Garg** and Ram Kumar (2006). "Strength Assessment of Existing Bridges for Bridge Management System". Proc. Adv. In Bridge Engg., IIT Roorkee, March, pp. 301-311

R.K. **Garg** and S. Garg (2005). "Recent Trends in use of Electronic Sensors and Actuators for Infrastructural Asset Management - an Overview". Proc. National Symp. on Instrumentation (NSI30), IISc & Univ., Cochin, Nov-Dec, pp.1298-1304.

G.N.V. Rao, R.K. **Garg** (1992). On Simulation of ABL Profile in Wind Tunnel, pt. 1: Mean Velocity Profile. Asian Cong. On Fluid Mech., Taejon, Korea. Aug. 1992.

R.K. **Garg**, H.J. Niemann (1995). On Three Dimensionality of Fluctuating Aerodynamic Forces on Circular Cylindrical Structures. 9th Intl. Conf. On Wind Engineering, New Delhi. Jan. 1995, pp. 129-140.

R.K. **Garg**, J.X. Lou, M.Kasperski(1995). Some Features of Modeling Spectral Characteristics of Flow in Boundary Layer in Wind Tunnels 9th Intl. Conf. On Wind Engineering, New Delhi. Jan. 1995, pp. 299- 310.

K.K. Chaudhry, R.K. **Garg** & D.N. Trikha. (1995). Wind Induced Forces on the High Rise Building Curved in Plan. National Seminar on High Rise Structural, Allahabad Nov. 1995.

R.K. **Garg**, D.N. Trikha and K.K. Chaudhry (1996). Computerized Data Acquisition I and Analysis for Studying Dynamics of Structures. National Computer Aided Structural. Analysis and Design, Hyderabad. Jan. 1996.

K.K. Chaudhry and R.K. **Garg** (1997). Estimation of Wind Forces on a Non-Prismatic High-rise Building having Curved Faces, The Struct. Engg. Convention, Madras, Feb. 1997 pp. 576-582.

R.K. **Garg** P.C. Sharma Suraj. P & D.N. Trikha (1997). Low-cost techniques for Improving Resistance of Non-engineered Dwellings against Cyclones. Proc. 2NSWE, Wind Effects on Structures, Ghaziabad. April, 1997. Pp. 43-53.

K.K. Chaudhry and R.K. **Garg** (1997). Wind Induced Pressure Field around a 98m High Building. Proc. 2NSWE, Wind Effects on Struct., Ghaziabad, April, 1997. Pp. 91-100.

A.K. Pandey, R.K. **Garg**, Ram Kumar, D.K. Paul and D.N. Trikha (1997). Behaviour of Nuclear Containment shell under Strong Winds. Proc. 2NSWE, Wind Effects on Struct., Ghaziabad, April, 1997. Pp. 137-146.

R.K. **Garg** (1997). Effects of Cyclones on Microwave Towers: Static Response. Int. Conf. On Habitat, New Delhi Dec. 1997, pp. III- 76-81.

R.K. **Garg**, M.Kasperski, H.-J.Niemann and K.K.Chaudhry (1999). Aspect Ratio Effects On The Aerodynamics Of Short Circular Cylindrical Structures, 10th Intl. Conf. on Wind Engineering, Copenhagen, Denmark. June, 1999.

R.K. **Garg** (1999). Emerging Trends in the Structural Design of Glass Cladding, Int Conf On Structural Engg. IE(I) & UOR at Ghaziabad. Sep., 1999, Pp. 125-136.

R.K. **Garg** (2001). Extreme winds (Cyclone, Thunderstorm & tornadic): Characteristics & design consideration. Proc. Adv. In Str. Dynamics & Design. at SERC, Chennai. Jan., 2001 pp. 649-656.

R.K **Garg** ,P Lakshmy, DC Sharma, R Deoliya (2001). Wind induced Forces on triangular base Tubular Lattice Towers, Structural Engg. Convention IIT, Roorkee SEC2001, Oct. 2001, PP.

R.K **Garg** (2002). Assessment of an Extreme Wind event: Approach towards mitigating disasters, Adv. In Civil Engg., IIT Kharagpur, Jan. 2002. pp. 1496- 1505.

R.K **Garg** (2002). Atmospheric winds : Their characteristics, simulation and considerations designing structures: Invited Lecture, Nat.W/P on wind effects on Build and Struc, AMU, Aligarh, Feb 2002.

P.Lakshmy, R.K **Garg** (2002). Aerodynamic Studies on reinforced concrete chimneys Nat. Conf Wind Engg. IIT Roorkee, April 2002 PP 246-254.

R.K **Garg**, Ram Kumar (2002). Fiber-optic sensors for performance monitoring of Civil engineering structures, Nat. Conf Sensor Tech, CCES, DRDO, New Delhi Sep 2002(Poster).

R K **Garg**, Ram Kumar, AK Dhall, MVB Rao (2002). Seismic resistant design of bridges a comparative study of codal provisions, 12th Symp Earthquake Eng, IIT Roorkee, Dec 2002 PP,1419-1426.

R K **Garg**, P. Lakshmy, Ram Kumar, MVB Rao (2004). Characteristics and control of vortex-shedding induced oscillations of cable supported bridges. Proc Nat. Conf Wind Engg, VNIT, Nagpur, Feb. 2004, pp. 213-220.

R K **Garg**, Ram Kumar (2003). Fiber optic sensors for smart monitoring of civil engineering structures. Proc Nat. Sem. on Smart materials, intelligent structures in Civil Engg. (CD ROM). ACCE Bangalore June 2003.

KK Chaudhry and R K **Garg** (2004). Wind induced response of chimneys under interference with similar structures, Proc Nat. Conf Wind Engg, VNIT, Nagpur, Feb. 2004, pp. 129-137.

- d. **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.)

Number of Books authored/edited:

- (i) IRC:SR-22- “*SOAR on Areas of Application and Techniques of Instrumentation in Traffic Engineering*”. Indian Roads Congress, New Delhi. (As the Member-Secretary of IRC-Instrumentation Committee (G5) written several chapters, compiled and edited the draft).
- (ii) IRC: SP:80. “*Guidelines for Corrosion Prevention, Monitoring and Remedial Measures for Concrete Bridge Structures*”. (As a Member of the Maintenance and Rehabilitation Committee - B 8 of IRC).
- (iii) IRC:SR-24- “*SOAR on Areas of Application and Techniques of Instrumentation in Highway Engineering*”. Indian Roads Congress, New Delhi (Under print).(Role-As the Member-Secretary of IRC-Instrumentation Committee (G5) written several chapters, compiled & edited the draft).

- (iv) One Chapter in “*Guidelines for planning and Construction of Roads in Cyclone Prone Area*”. (Guideline considered by Indian Roads Congress; sponsored & uploaded on its website for use of public by NDMA, New Delhi).
- (v) Preparation of BIS Handbook **SP 64 (S & T): 2001** “Explanatory Handbook on IS Code of Practice for Design Loads (Other Than Earthquake) for Buildings & Structures, Part3- Wind Loads [IS875(Part3):1987]. (Role as a member of the project sponsored by BIS and responsible for all the solved examples).

Number of Patents Granted/Applied for:

- i. **Copyright** for the design of the *MBIU* entitled “Design of Visual Inspection Unit including Structural Analysis and Mechanical Joints” filed vide CSIR-IPMD No. 011CR2012, dated 30th August 2012.
- ii. The **patent** entitled “Vehicle mounted automatic controlled mobile bridge inspection device”. Number **2984/DEL/2012**, filed dated 25 Sept 2012. (Role as team leader of the project jointly with CSIR-CMERI-CoEFM, Ludhiana).
- iii. **Trademark protection**. Filed for “*FiboStrain* and *FibroStrain*”, for Fiber bragg grating strain sensors developed (jointly with CSIO, Chandigarh).
- iv. **Trademark protection**. Filed for “*SetuCare*”, and “*BridgeCare*” for *MBIU* (jointly with CSIR-CMERI-CoEFM, Ludhiana).

The following is the list of **grant-in-aid research projects (GAP)** sponsored by DST, New Delhi in which the undersigned has been instrumental for successful completion (or under progress). Here, PI or PL stands for Principal Investigator or the Project Leader.

- Project No. CSIR-CRRI-GAP4413 (DST/TSG/STS/2004/50) entitled “Distress diagnostic, performance evaluation and bridge management system for concrete bridges” – completed as PI & PL.
- Project No. CSIR-CRRI-GAP4456 (DST/TSG/STS/2005/7) entitled “Development of Critical Infrastructure Information System in GIS Environment for Maintenance of Bridges on National & State Highways” – completed as a team member.
- Project No. CSIR-CRRI-GAP4470 (DST/TSG/STS/2006/76) entitled “Development of Mobile Bridge Inspection Unit” – completed as PI & PL, jointly with CSIR-CMERI-CoEFM.
- Project No. CSIR-CRRI-GAP4492(DST/TSG/NTS/2009/32) entitled “Development of Fiber Bragg Grating based Distributed Strain Sensor System for Concrete Bridges” – completed as Co-PI & PL, jointly with CSIR-CSIO.
- Project No. CSIR-CRRI-GAP4539 (DST/TSG/2011/43) entitled “Intelligent Remote Health Monitoring for Bridge System” –undergoing as Co-PI/PL jointly with CSIR-SERC.

Training Imparted to professional (Selected)

- Guided several B. Tech and M. Tech students (over 13).
- Coordinator for CSIR-CRRI Training Courses on “Bridge Distress Diagnostics, Performance Evaluation and Rehabilitation” for years 2013, 2014 and 2015. [It is an annual course being conducted at CSIR-CRRI].
- Delivered lecture entitled “Load Carrying Capacity and Residual Life Assessment of Concrete Bridges” in the training program on Bridge Diagnostic, Performance Evaluation and Rehabilitation on June 2010, 2011, 2012 and 2013 conducted by CRRI.
- Delivered lectures entitled "Load Carrying Capacity and Residual Life Assessment of Concrete Bridges" and "Performance Monitoring and Health Assessment of Highway Bridges through Instrumentation" in a short course for the engineers of state PWD during March 11-13, 2013 at Patna.
- Delivered lectures for the PGRPE programme under AcSIR, New Delhi (M. Tech) for two courses namely (i.) Bridges and Tunnelling, and (ii). Health monitoring (in sessions 2012/ 2014).
- Delivered lectures on “Analysis of Bridges” in a short course entitled Bridge Design and Construction, for engineers/professionals organized by CRRI (during 25 - 29 Nov., 2013).

Training Received (Selected):

- Science for Rural Societies, IIPA, Nov. 2015
- Empanelment for Evaluator Accreditation (Engg. & Tech.) May 2011 by NBA, New Delhi.
- Attended “Leadership Program” 2007, Sponsored by CSIR, New Delhi.
- Training on Equipment-“Structural Testing System” at Boulder (USA), Dec. 2005.
- Attended training “Internal quality audit as per ISO 9001:2000” May 2003, BIS.
- Attended workshop “Structural health monitoring” 1999, ISSS-SPIE at IISc Bangalore.
- 10th Int. Wind Engg. Conf. at Copenhagen, Aug. 1996.
- CSIR-DAAD fellowship at Ruhr University, Bochum (FRG) from June 1992 to Sep.94.
- Conference at First Euro-Afro. Wind Engg. Conf. at Guernsey (UK) 1993,
- Training on “Industrial Aerodynamics”, Dept. Aero. Engg., IISc Bangalore (Jan-Mar, 1987).