



1. Name : **Dr Ambika Behl**
2. Date of Birth : 18.06.1980
3. Email : ambikabhel.crri@nic.in behl.ambika@gmail.com
4. Academic qualifications beginning with Bachelor's Degree

| SL | Degree | Subject | University/ Institute | Year | Remarks |
|----|---------|--------------------|-------------------------------|------|---|
| 1. | B. Tech | Chemical Engg | P.T.U. Punjab | 2001 | 1 st Division |
| 2. | M. Tech | Polymer Technology | Punjab University, Chandigarh | 2004 | 1 st Division |
| 3. | Ph.D. | Chemical Engg | IIT Roorkee | 2016 | Thesis Title: Performance Characteristics of Warm Mix Asphalt |

5. Present employment and post held:

| Post | From | To | Organization | Remarks |
|--|----------|-----------|--------------|--|
| Sr. Pr. Scientist (Scientist F) | Jan 2023 | Till date | CSIR-CRRI | |
| Scientist EII (Principal Scientist) | Jan 2017 | Jan 2023 | CSIR-CRRI | |
| Scientist EI (Sr. Scientist) | Jan 2014 | Jan 2017 | CSIR-CRRI | Was awarded with merit promotion to Scientist E-II |
| Scientist C | Jan 2010 | Jan 2014 | CSIR-CRRI | |
| Scientist B | Jan 2007 | Jan 2010 | CSIR-CRRI | |

- **Serving as Associate Professor at Academy of Scientific and Innovative Research (AcSIR)**

6. Awards/honors received including fellowships of professional bodies.

- Received **IRC Pt. Jawaharlal Nehru Birth Centenary Award 2022** by the Hon'ble **MoRTH minister Sh. Nitin Gadkari** and Hon'ble minister **Gen V.K Singh** (Dr Behl became the first woman to receive this award)
- Received **CIDC** (Construction Industry Development Council) **Vishwakarma Achievement Award 2021**
- Received **Felicitation Award in 2023** during **ASSOCHAM Annual Flagship Infrastructure Conference**, from the Hon'ble **MoRTH minister Sh. Nitin Gadkari** for her **Exemplary Contribution** towards research in **Sustainable Road Infrastructure**.
- Received **Ambassador of Change Award** by Ease of Doing Business and National Highways EV, for her work on Sustainable Pavements; **2024**
- Received **best paper award** from **Dr Harsh Vardhan** at India International Science Festival (IISF) 2016 for the paper titled **“Utilization of waste PVC pipes in road construction. IISF 2016 was organized by the Union Ministry of Science and Technology and Earth Sciences.**
- Received **felicitation by Indian Plastics Institute** for her work in the field of **Use of waste plastics for road construction.**
- Appeared in CSIR's top **women scientists'** names shown on **CSIR Foundation day 2023**
- Received **Best Research Paper Award** for her paper **“Performance Characteristics of Asphalt Mixes Containing High RAP Percentage”** at Global Road Construction & Safety Conference, **2022.**
- Received **“Bitumen India Award-2017”** in the 2nd AMEA Bitumen Conference **for her contributions in the field of new technologies for bituminous roads.**
- Received **SKOCH Order-of-Merit & SILVER Award 2019** for the project **“Rehabilitation of National Highway by Recycling of Asphalt Pavement”.**
- She was invited by **Australian Road Research Board (ARRB)** to present her research paper titled **“Study on Waste Polyvinyl Chloride Modified Bitumen for Paving Applications”** in the 25th annual ARRB conference held in Australia.
- She received **letter of appreciation** from **Govt. of Himachal Pradesh**, Dept of Environment Science & Technology for successfully implementing **waste plastic road construction** project in Shimla and for imparting training to their engineers.
- Received **Commendation Certificate** from Indian Road Congress (**IRC**) for my research paper on **“Warm Mix Asphalt- The wave of future”**, in **73rd IRC annual session on January 2013.**
- Was sent on deputation to **CSIR South Africa** for 2 months for Technical Training on APTF 2009-10.
- **Received Fellowship of The Institution of Engineers (INDIA) in March 2024**
- Served as **Expert member** in Multidisciplinary Expert Group (MDEG) of **BRO** to provide **technical guidance** for carrying out trials on use of **Insitu stabilization** of failed roads in construction of road pavements under **Project HIMANK.**

- Serving as **expert member of Shriram Institute's Research Advisory Committee (RAC)**
- **Appeared in the list of top 10 "Women in Construction" in the country in women's day special issue of NBM&CW 2023**

7. Processes / Technology developed / Patents

- **Developed** a process to produce **Bio-bitumen by the pyrolysis of rice straw**. Filed **patent on "Process of producing Bio-Bitumen from Pyrolysis of Lignocellulosic Biomass" in 2024.**
- Developed **indigenous recycling agent** for hot mix **recycling of pavements**. Filed **patent on it in 2023.**
- **Developed an indigenous additive to be used for warm mix asphalt applications.**
- Got **Patent granted on "Process of chemically blending PVC waste into bitumen for making a new and improved PMB" in 2021.**
- Developed methodology to use **polymer based pharmaceutical waste** for modification of hot mix asphalt.

7. Membership in organizational / national / international committees.

- Served as **Chairperson of PCD-6 BIS** committee for 1 year
- Member of CRRM Management Council**
- Life Member of Indian Road Congress**
- E-member of WMA Organization USA and Asphalt Institute,**
- Member of PCD 6 BIS Committee**
- Life Member of Transportation Research Group of India**
- Member of IRC H9 committee**
- Member of IRC H-2 committee**
- Council Member of ASSOCHAM**
- Member of international alliance to end plastic waste (AEPW)**
- FIE of The Institution of Engineers (INDIA)**
- Member of Research Advisory Committee of Shriram Institute**
- Honorary member of Bitumen India Forum**
- Member of National Task Force for taking measures to eliminate identified single use plastic items and effective implementation of Plastic Waste Management.**
- Member of Task Force committee of MoRTH on "Use of Bitumen and Modified Bitumen in the Construction of Flexible pavements".**
- Member of NRIDA NQM selection committee.**

8. Papers published

Total Publications are: 73

Journals:21

Conferences: 52

Titles of some of the important papers published are given below:

PAPERS PUBLISHED IN JOURNALS

- M Verma, G Bharath, **A Behl**, T Bhaskar V Kakade, J Kumar., “ Performance Evaluation of Bio-Binder Prepared with Rice Straw Bio-Oil”, Canadian Journal of Civil Engineering, August 2023. 50(12): 984-993. <https://doi.org/10.1139/cjce-2022-0467>.
- Singh, A., **Behl, A.**, Dhamaniya, A. (2024) “Feasibility Study on the Use of Multilayer Plastic (MLP) Waste in the Construction of Asphalt Pavements” Recent Developments in Water Resources and Transportation Engineering. Lecture Notes in Civil Engineering, vol 353. Springer, Singapore
- **Ambika Behl**, Siksha Kar, “ Evaluation of Bitumen Emulsion and Foamed Bitumen in Cold Recycled Paving Mixtures”, December, 2022, Highway Research Journal, Indian Road Congress pp32-40.
- **Behl, A.**, Bharath, G., Kumar, A. (2023). “Application of FDR Technology for Upgradation of a National Highway”, Recent Trends in Transportation Infrastructure, Volume 1. Lecture Notes in Civil Engineering, vol 354. Springer, Singapore. https://doi.org/10.1007/978-981-99-3142-2_15
- **Behl Ambika**, Bharath G, Chandra Satish, “Characterization of Fatigue Resistance of Warm Mix Binders using Linear Amplitude Sweep Test”, International Journal of Pavement Research and Technology (SCI), doi.org/10.1007/s42947-021-00031-3 ,2021
- **Behl Ambika**, Nagabhushana M.N, Shukla Manoj, “Evaluation of rust spots on an airport runway”, Indian Highways, March 2021
- Kar, S. S., Kumar, B., **Behl, A.**, & Shukla, A. (2020). Development of Methodology for Quantification of GHG Emission during Construction of Flexible and Rigid Pavement: A Case Study. Indian Highways, 48(10).
- Khusboo Arora, **Ambika Behl**, P.K. Jain, “**Design Approach for Low Volume Rural Road Using Nano-materials Stabilized soil**”, Journal of ASTM: Advances in Civil Engineering Materials (SCI), Vol 7, Issue 2, 19-31, 2018
- **Ambika Behl**, Prof Satish Chandra, “**Aging Characteristics of Warm Mix Asphalt Binders**”, ASCE, Journal of Materials in Civil Engineering (SCI), Vol. 29, Issue 10 , 2017
- **Ambika Behl**, Satish Chandra, V.K Aggarwal, S. Gangopadhyay, “**Zero Shear Viscosity of Bitumen-Filler Mastics of Warm Mix Binders**”, ASCE Journal of Material Science in Civil Engineering (SCI), ISSN 0899-1561/04014260(6), 2015

- Khusboo Arora, **Ambika Behl**, P.K. Jain, “**Review on Performance and Rheological Characteristics of Low Energy Asphalt Materials**”, Journal of Indian Road Congress Volume-77-3, Paper no. 660, pp-421-432,2016
- **Ambika Behl**, Prof Satish Chandra, S. Gangopadhyay, “**Durability and Performance Characteristics of Warm Asphalt Mixes**”, Journal of Indian Road Congress Volume: 77-1 ISSN:0258-0500, pp 323-332, 2016
- Siksha Swaroopa Kar, **Ambika Behl** and Anuradha Shukla, “**Green House Gases (GHG) Impact Assessment Tools: A Review**”, Indian Highways, Volume 45 Issue 3 pp 19-27 2016
- **Ambika Behl**, Girish Sharma, Gajendra Kumar “**A Sustainable Approach: Utilization of Waste PVC In Asphaltting of Roads**”, Journal of Construction & Building Materials (SCI), Vol.54, pp 113-117, 2014
- Khusboo Arora, Uma devi, **Ambika Behl** and P.K Jain, “**Rheology of VG-40 bitumen prepared by a new process**” International Journal of Construction Materials and Structures, Vol.2, No.1, 28-35, 2014
- **Ambika Behl**, Girish Sharma, Gajendra Kumar, Umadevi Rongali, P.K.Jain, “Effect of Natural Asphalt on Performance Characteristics of Bitumen and Its Mixes”, International Journal of Research in Engineering and Advanced Technology, Volume 2, Issue 6, pp 77-90 ISSN- 2320-8791, 2015.
- **Ambika Behl**, Girish Sharma, Gajendra Kumar, “**A Sustainable Approach: Utilization of Waste PVC In Asphaltting Of Roads**”, Journal of Construction & Building Materials (SCI), Vol.54, pp 113-117, 2014.
- **Ambika Behl**, Prof. Satish Chandra, Prof. V.K Aggarwal, “**Rheological Characterization of Bituminous Binder containing Wax based Warm Mix Asphalt Additive**”, International Journal of Mechanical & Civil Engineering, Vol. 9, Issue 1, pp 16-22, 2013
- **Ambika Behl**, Dr. Sunil Bose, Girish Sharma, Gajendra Kumar, “**Warm Bituminous Mixes: The wave of future**”, Journal of IRC, Volume 72-2, 101-107
- **Ambika Behl** & Satish Chandra, “Stabilised Pavements: Sustainable Pavements” Civil Engineering and Construction Review, September 2020
- **Ambika Behl** & Satish Chandra, “Waste Plastic Roads”, NBM&CW, March 2021

PUBLICATIONS IN CONFERENCES

- Paras M, G Bharath, Akshay G, Ambika Behl and Tejas T, “Development of Resilient Modulus Model for the Bituminous Courses”, 14th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC), December 2022
- Chinmaya S, G Bharath, S Ahmed, A Behl, M S Balreddy , “Performance Evaluation of Conventional and Field-Produced High Modulus Asphalt Binders and Mixtures”, 14th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries, December 2022
- G Bharath, A Behl, S Kar, S Chandra. “Successful utilization of high amount of reclaimed asphalt pavement material in bituminous pavements: Indian case study”, 2nd International Conference On Transportation Infrastructure Projects: Conception To Execution, September 2022
- Dr. Ambika Behl, Sh. Shankh Das, Saurabh Verma, “Use of Waste Plastic for Road Construction in Delhi NCR Region”, IABSE World Congress, September 2023 on Engineering for Sustainable Development (International Association for Bridge and Structural Engineering).
- Ambika Behl, G Bharath And Amit Kumar , “Application of FDR technology for upgradation of a national highway”, 2nd International Conference On Transportation Infrastructure Projects: Conception To Execution, September 2022
- Shailja, Dr. Ambika behl, Dr. Saraswati, “A review on crumb rubber content in modifying asphalt to save the environment from the solid waste crisis”, National Conference on Sustainable Waste Management Practices (SWMP-2023)
- Shailja, Dr. Ambika behl, Dr. Saraswati setia, “Comparison of Lake Asphalt with Petroleum Bitumen composition and its effect on Physical and Rheological Properties of Bitumen”, International Conference on Recent Trends in Engineering and Sciences (RTES-2023)
- Vivek saraswat, Dr. Ambika behl, Dr. Babita Saini, “Impact of additives on the performance of cold recycled asphalt mixes”, International conference on Innovative methods and practical applications for cognizant transportation systems (IMPACTS2023).

- Saurabh kumar tiwari, Dr. Ambika behl, Dr. Rajiv kumar, Dr. A.k. Prabhakar, “Influence of different warm mix chemical additives on characteristics of warm mix asphalt”, International conference on Innovative methods and practical applications for cognizant transportation systems (IMPACTS2023).
- Saurabh kumar tiwari, Dr. Ambika behl, Dr. Rajiv kumar, Dr. A.k. Prabhakar, “Effects of Compaction Temperature on Warm Mix Asphalt”, International Conference on Recent Trends in Engineering and Sciences (RTES-2023)
- Gargi Jagad, **Behl Ambika**, Dave S, “Performance Characteristics of Asphalt Mixes Containing High Percentage of RAP Material”, ASCE International Airfield & Highway Pavements Conference (Pavements 2021) June 8-10, 2021
- **Behl Ambika**, Chandra Satish, “Application of Cold in-place Recycled Mixes for Rehabilitation of National Highways in India: Case Study”, ASCE International Airfield & Highway Pavements Conference (Pavements 2021) June 8-10, 2021
- **Behl Ambika**, Chandra Satish,(2020) “ Waste Plastic Roads”, 3rd International Conference on Innovative Technologies for Clean and Sustainable Development, 19–21 February 2020, India.
- **Behl Ambika**, Shikha Auskar,(2020) “Utilization of Lignin as an Antioxidant in Asphalt Binder”, 3rd International Conference on Innovative Technologies for Clean and Sustainable Development, 19–21 February 2020, India.
- **Ambika Behl** and Siksha Kar,(2020), ”Impact of Warm Mix Additive (WMA) on Performance of High RAP Mixtures”, 13th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries, 11-12 December 2020
- **Ambika Behl**, M N Nagabhushana, Siksha Swaroopa Kar, Manoj Shukla, Satish Chandra, “Asphalt pavement recycling: a case study”, Conference on Transportation Infrastructure Projects: Conception to Execution, IIT Roorkee, January 2019.

- Siksha Swaroopa Kar, **Ambika Behl**, M N Nagabhushana, Gagandeep Singh, “Studies on Use of Ferro Chrome Slag for replacement of Aggregate in Road Construction”, International Conference on Resource Sustainability – Cities, Australia, July 2019
- **Ambika Behl**, Satish Chandra, Siksha Swaroopa Kar, “Effect of warm mix additive on the performance of Crumb rubber modified asphalt: A case study”, Rubberized Asphalt Rubber 2018, South Africa, September 2018
- **Ambika Behl**, “CRRI Experiences on Recycling of Pavements”, ASSOCHAM's 4th International Conference on ROADTECH, Delhi, September 2018
- **Ambika Behl**, “Future of Plastic Modified Bitumen”, 2nd AMEA Bitumen Conference, Mumbai, August 2018
- **Ambika Behl**, “Plastic Pollution”, workshop on “Beat Plastic Pollution” organized by Department of Environment, GNCTD, Delhi, October 2018
- **Ambika Behl**, “Waste Plastic Technology” Workshop on use of “waste plastic in road construction” organized by Department Of Environment, Science & Technology, Govt. Of Himachal Pradesh, September 2018.
- **Ambika Behl**, M N Nagabhushana, Siksha Kar, “ Comparative Study of GHG Emission From Various Pavement Construction Technologies”, International Road Federation Conference on “Safe Roads and Smart Mobility: the Engines of Economic Growth”, Nov 2017, Delhi
- **Ambika Behl**, Satish Chandra, Siksha Kar, “Effect of warm mix additive on the performance of Crumb rubber modified asphalt: A case study”, International Road Federation Conference on “Safe Roads and Smart Mobility: the Engines of Economic Growth”, Nov 2017, Delhi
- **Ambika Behl**, Siksha Kar, M N Nagabhushana, Manoj Shukla, Satish Chandra, “ Potential of foam bitumen in asphalt recycling”, International Road Federation Conference on “Safe Roads and Smart Mobility: the Engines of Economic Growth”, Nov 2017, Delhi
- **Ambika Behl**, “Case study on Cold in Place recycling”, 3rd ROADTECH Conference organized by ASSOCHAM, August, 2017

- **Ambika Behl**, “Plastic Roads and its Feasibility”, AICON Bitumen Conference 2018, Jan 2018, Mumbai
- **Ambika Behl**, “Use of foam bitumen in recycling of asphalt pavements”, Conference On "New Technology For Road Construction", Lucknow, December 2017
- **Ambika Behl**, Prof Satish Chandra, “Compaction and performance characteristics of warm mix asphalt”, 8th International Conference on Maintenance and Rehabilitation of Pavements (MAIREPAV8), Singapore, July 2016
- **Ambika Behl**, Gajendra Kumar, “Effect of natural asphalt on performance characteristics of bitumen and its mixes”, Intl conference on Transportation Planning and Implementation Methodologies for Developing Countries, Mumbai, December 2016
- **Ambika Behl**, Prof Satish Chandra, ”Moisture susceptibility & Compaction characteristics of warm mix asphalt”, Intl conference on Transportation Planning and Implementation Methodologies for Developing Countries, Mumbai, December 2016
- **Ambika Behl**, Siksha Kar, “Study on Use of Nanotechnology in Asphalt Road Construction”, International Conference on Nanomaterials & Nanotechnology organized by Vinoba Bhawe Research Institute, Allahabad, March 2017.
- **Ambika Behl**, Siksha Kar, P.K. Jain, Mrs Uma Devi, “A Laboratory Investigation on the Properties of Asphalt Binder and Mixture Containing Rediset LQ”, 3rd international Conference of Transportation Research Group of India, Kolkata, Dec 2015
- Siksha Kar, Binod Kumar, **Ambika Behl** & Dr P K Jain, “Estimation of GHG Emission in Construction of Rigid and Flexible Pavement: A Case Study”, Conference on Sustainable Asphalt Pavement for Developing Countries, CSIR-CRRI New Delhi, March 2016.
- Siksha Kar, **Ambika Behl**, P.K. Jain & A. Shukla, “Comparative study of Carbon Emission during Construction of Warm and Hot Mix Technology”, Conference on Sustainable Asphalt Pavement for Developing Countries, CSIR-CRRI New Delhi, March 2016.
- **Ambika Behl**, Gajendra Kumar, Girish Sharma, “Performance of Low Energy Crumb Rubber Modified Bituminous Mixes”, 2nd International Conference on Transportation Research Group, Agra, India, December 2014.
- **Ambika Behl**, Gajendra Kumar, Girish Sharma, Dr. P.K Jain, “Evaluation of field performance of warm-mix asphalt pavements in India”, “2nd International Conference on Transportation Research Group, Agra, India, December 2014.

- **Ambika Behl**, Satish Chandra, S. Gangopadhyay, “Temperature Susceptibility of Warm Mix Bituminous Binders, “Transportation Planning and Implementation Methodologies for Developing Countries, IIT Mumbai, December 2014
- Ambika Behl, “ Utilization of Waste Plastic and waste tire rubber in Asphaltting of Roads”, 3rd International Conference on Recycling and Reuse of Materials, Kerala April 2014
- Ambika Behl, Dr.S.Bose, Girish Sharma, Gajendra Kumar, Uma Devi, “**Warm Bituminous Mixes: Road To Sustainable Pavement!**”, **published in the proceedings of** Conference on Infrastructure, Sustainable Transportation, 18-20 Oct’2010 organized by IISC Bangalore.
- Ambika Behl, Dr.S.Bose, Girish Sharma, Gajendra Kumar, “**Warm Bituminous Mixes: Road To Sustainable Development**”, International Seminar on Reducing Carbon Footprints in Road Construction, organized by IRC, 17-19 Feb 2011.
- **Behl Ambika**, Bose Sunil, Sharma Girish, Kumar Gajendra, Uma Devi , “ Tapat Mishrit Asphalt main Tapat ka Shitikaran (in hindi)” National Seminar on Naye Nirmaan Samaghriya, won second prize for best paper presented in this seminar, jointly organized by CBRI & CRRI.
- Bose Sunil, Nagabhushana. M.N., Mittal, Abhishek, & **Behl, Ambika**, “New and Innovative Technologies for Bituminous Construction Specifications in India”, National Get-together on Road Research and its Utilization, March 5 - 6, 2010
- **Ambika Behl**, Dr.P.K Jain, Girish Sharma, “Study on Waste Polyvinyl Chloride Modified Bitumen for Paving Applications”, 25th ARRB (Australian Road Research Board) conference 24-26 Sept 2012 in Australia.
- **Ambika Behl**, Dr.S.Bose, Girish Sharma, Gajendra Kumar, “**WARM BITUMINOUS MIXES: Way to SUSTAINABLE Pavements**”, **presented and published in the proceedings of** 9th International Transportation Specialty Conference held in Edmonton, Canada 6-9th June 2012 organized by Canadian Society of Civil Engineering.
- **Ambika Behl**, “Sustainable Road Construction Technologies”, published in the proceedings of National Workshop Organized by NIEST Jorhat, Sept 2011.
- **Ambika Behl**, Gajendra Kumar, Dr.P.K Jain, “Performance of Low Energy Crumb Rubber Modified Bituminous Mixes”, 14th REEEA (Road Engineering Association of Asia & Australasia) conference, Malaysia in 2013.

- **Ambika Behl**, Prof Satish Chandra, Prof V.K. Aggarwal, “Effect of Sasobit on Viscosity and Rheology of Bituminous Binders”, International Conference on Advances in Chemical Engineering, IIT Roorkee, 2013.