

GUPTA ABHISHEK

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Opp. Glass factory

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Date of Birth: March 22, 1981

Objective

To carve a niche for myself as a versatile professional & to contribute to the growth of industry and society as per best of my capabilities

Academic Qualifications

- **Master of Science (Building), National University of Singapore** 2003(Jan)-2005(September), CAPS – 4.75/5.00, Subjects - Advanced Fluid Dynamics, Computational Design Support Tools, Environmental Management and Assessment, Climatology and Building Design
- **B. E (Civil Engineering), Malaviya National Institute of Technology**, Jaipur, 1998-2002, Percentage 78.7%, **Gold Medalist**
- *All India Senior Secondary School Examination (CBSE, XII)*, 1998, Percentage, 86.8%
- *All India Secondary School Examination (CBSE, X)*, 1996, Percentage- 87.6%

Professional Experience

BITS Pilani	Assistant Lecturer	Sept 2005 – Dec 2005
Steel Authority of India Limited	Junior Manager (Projects)	Jan 2006 – May 2007
<i>Responsibilities</i>		
<ul style="list-style-type: none">• Project Monitoring, Co-ordination with different departments/ agencies and Execution• Implementation of Primavera 5.0 in Project/BSL		
<i>Projects</i>		
<ul style="list-style-type: none">• Quenching System for Coke Oven Battery 5 (Brownfield project): Construction of Quenching tower and Vapor Spray Pump house, Revamping of Settling tank• Augmentation of Coking Coal Storage (Brownfield project): Construction of Silos, Construction of diversion road, Store and Executive building		
Cushman & Wakefield (India) Pvt. Ltd.	Project Coordinator	June 2007 – Till date
<i>Responsibilities</i>		
<ul style="list-style-type: none">• Project Co-ordination - presently involved in IT Park project		

Conferences & Publications

- Participated in *International Conference on Healthy Buildings 2003, Singapore, 7-11 December 2003*
- Participated in *9th International Conference on Air Distribution in Room, ROOMVENT 2004, Portugal 5-8 September 2004*
- 5 papers in International Conferences

- 1 paper in International Journal (Building & Environment, Volume 42, Issue 1, January 2007, 237-245)

Software Interface

- *Platforms:* Windows (98/2000/XP)
- *Application Tools* – MS Office
- *Programming Languages:* C++, FORTRAN
- *GIS Software:* MapInfo
- *Building Simulation Tools:* Lightscape , TAS
- ***Project Planing & Monitoring: Primavera 5.0, MSPProject***
- *Data Modeling:* SPSS

Achievements & Awards

- Represented Bokaro Steel Plant in CHAIRMAN'S TROPHY FOR YOUNG MANAGERS 2006
- NUS Research Scholarship
- Professor M.M Dandekar Memorial Award 2002 for Academic Excellence
- Bhama Shah Award 2002-03 of Maharana Mewar Foundation Udaipur at State Level

Personal Details

- *Strengths:* Interpersonal skill, perseverance, analytical abilities
- *Hobbies:* Digital Photography, web surfing
- *Participation* in Debates, Quizzes, Essay competitions, fests at school and college level

(Abhishek Gupta)

PAPERS IN INTERNATIONAL JOURNALS

A.Gupta, K.W.D. Cheong, 2007. Physical characterization of particulate matter and ambient meteorological parameters at different indoor-outdoor locations in Singapore, Building and Environment, 42: 237-245.

The paper reviews the exposure to fine and coarse particles in different indoor and outdoor locations. The methodology involves measuring the particulate matter at different indoor and outdoor locations. The locations included a major expressway (high traffic volume), a minor road, and naturally and mechanically ventilated indoor spaces. It was observed that significant concentrations of fine particles were found at the expressway as compared to the normal road and naturally ventilated space. However, larger size particles were found to be higher in number density (count per litre) and mass concentration at the minor road and naturally ventilated space at close proximity to the minor road. In the mechanically ventilated space the particles above 1 mm size were negligible both in count and mass. A linear relation was established between the particle mass (PM₁₀) and particle count ($r^2 = 0.5564$, $n = 60$). Denser particulate matter was found at naturally ventilated indoor spaces in the evenings. Indoor-outdoor ratio (I/O) for the naturally ventilated space is observed to be closer to unity as in the case of mechanically ventilated space with 0.46. A higher I/O ratio is observed in the evening as compared to morning for the naturally ventilated space. Better correlation was observed between fine and coarse mode particles at the expressway as compared to the minor road.

PAPERS IN INTERNATIONAL CONFERENCES

A.Gupta, K.W.D. Cheong, Wong Nyuk Hien. Characterization of particulate matter in the tropics. International Conference on Healthy Buildings 2003, Singapore, 7-11 December 2003.

This paper reviews the exposure to particulate matter on bus stops during peak traffic hours. The methodology involves monitoring of Total Suspended Matter, PM₁₀, PM_{2.5} and PM₁ using Grimm Dust Monitor for a period of five weekdays. Traffic flow and relevant meteorological parameters were also recorded. The exposure to particulate matter is critical since fine particles get deposited into the respiratory tract and can lead to various respiratory diseases and premature deaths. The study shows that PM₁₀ comprises almost 80% of the total suspended particulate matter. PM₁ could comprises up to 83% of PM_{2.5} which could be critical as surface number dose will be much higher for finer particles than for coarse particles. In addition it was observed that PM₁ gravimetrically comprises 62.2±4.9% of PM₁₀ where as on basis of number density PM₁ comprises 99.5±0.3% of PM₁₀. The concentration of PM₁ is significant as it could have adverse health impacts on the lung with greater penetration. The infiltration of particulate matter into the building will depend on size of particulate matter, filtration characteristics, properties of building envelope etc. Hence there is a need to have further research in this area.

A.Gupta, K.W. David Cheong, N.H. Wong. How ambient environment affects the migrations of particulate matter? ROOMVENT 2004, Portugal 5-8 September 2004.

The paper reviews the effect of environmental parameters on the migration of particulate matter. The methodology involves simultaneous monitoring of particulate matter using dust monitor at indoor and outdoor locations along with the ambient environmental conditions. The study is of great significance as Particulate Matter (PM) has been reviewed in terms of particle count, which is more significant as compared to particle mass. In this paper, the variation of Indoor (PM) /Outdoor (PM) calculated on the basis of count are studied as a function of ambient wind speed, temperature and humidity. Further detailed characterization of the PM on the basis of count is done to signify the importance of fine particles specifically PM₁ in comparison to PM₁₀. This study can help in designing ventilation strategy for naturally-ventilated buildings. Similar studies can help in selecting fresh air intake points for mechanically ventilated buildings in order to minimize the migration of air pollutants into the indoor environment

W. Zhou, K. W. Tham, M. S. Zuraimi, A. Gupta . Indoor air quality and thermal comfort studies in the tropics: a comparison between under-floor supply and ceiling-based mixing ventilation systems using female subjects. ROOMVENT 2004, Portugal 5-8 September 2004.

An experimental study was conducted in a field environmental chamber with the aim of comparing ceiling-based mixing ventilation (MV) system and under-floor supply system (UF) from the perspectives of indoor air quality and thermal comfort. Six tropically acclimatized female subjects participated in the experiments and they were required to complete a set of questionnaire pertaining to IAQ and thermal sensation every 20 minutes during each exposure of 2 hours. The UF system showed higher ventilation effectiveness as concentrations at occupant breathing zone of CO₂, CO, formaldehyde, TVOC and particulate matters were significantly lower than those under MV system. The subjects perceived less odour intensity and better air quality when they were exposed to UF system but no statistically significant difference existed. It was also found that UF systems created a bigger temperature gradient and higher air velocity in occupied zone (0-1.2m above floor) than MV system, resulting in colder thermal sensations and more frequent feelings of air movement at different body parts. However, such feelings of air movement were perceived by the subjects to be acceptable and may be an important and positive factor in promoting thermal comfort for the tropics.

A.Gupta, K. W. David Cheong. Airborne particulate matter concentration at different heights in a residential building in Singapore. Indoor Air 2005, September 4-9, 2005, Beijing, China.

The paper investigates the concentration of particulate matter (PM) at different storey heights in a building located close to a major expressway in Singapore. The study is significant as buildings located in close proximity to major expressways have a higher concentration of PM. These can be transported to the buildings and may cause significant health impacts. The particulate matter concentration (PM) is measured using dust monitors at different levels - deck, level 6, level 11 and the bus stop. Particulate matter has been characterized both in terms of particle mass and particle counts at each measuring location. The characterization in terms of particle counts shows that the fine particles comprise over 90% of the suspended particulate matter (PM₁₀). The fraction of fine particles (PM₁) gravimetrically out of the suspended particulate matter (PM₁₀) is highest at the bus stop. The PM₁ comprises up to 55% of PM₁₀ at the bus stop as compared to the 46 % at level 6 and level 11. The void deck of the building has the highest fraction of gravimetric mass for the particles between 1 and 2.5 microns where as the level 6 has fraction of gravimetric mass for the particles between 2.5 and 10 microns out of the total PM₁₀. The vertical profile of particle distribution shows that the particle concentration first increases attain a maximum value and then decreases for higher level. It is observed that a relatively weak correlation between fine and coarse mode particles is observed at level 6 in comparison to level 11, deck and bus stop.

A.Gupta, K. W. David Cheong. Airborne particulate matter concentration in outdoor and indoor spaces in Singapore. Indoor Air 2005, September 4-9, 2005, Beijing, China

The paper investigates the concentration of particulate matter (PM) at different indoor and outdoor locations in Singapore. The hot and humid climate throughout the year can affect the particulate matter concentration and its characteristics. The methodology adopted in this study involves the measurement of concentration of particulate matter using dust monitors. Particles are recorded both in terms of mass (µg/m³) and particle count (count per litre). The locations include a major expressway, a minor road, a naturally-ventilated space and a mechanically-ventilated space. The concentration of fine particles at expressway was significantly higher than the minor road and the naturally-ventilated space. However larger size particles were found to be higher in number density (count per litre) and mass concentration at the minor road and naturally-ventilated space which is at close proximity to the minor road. This shows that expressways are a source of traffic generated fine particles which comprises a major fraction of the suspended particulate matter. In the mechanically-ventilated space the particles above 1 micron size were negligible both in number and mass. Characterization of particulate matter in terms of particle count shows that fine particles comprises over 90% of the suspended particulate matter. A linear relationship was established between the particle mass (PM₁₀) and particle count ($r^2 = 0.56$, $n = 60$). It is also observed that the mass of particulate matter per unit count is time and space dependent. Denser particulate matter was found at naturally-ventilated indoor spaces in the evenings. A higher correlation was observed between fine and coarse mode particles at the expressway as compared to the minor road.