

## BIO-DATA



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2. Email(s) and contact number(s): ajindal99@yahoo.co.in  
09501022643
3. Institution: University College, Benra-Dhuri.
4. Date of Birth: 01/02/1981
5. Gender (M/F/T): Male
6. Category Gen/SC/ST/OBC Gen
7. Whether differently abled (Yes/No): No

### 8. Educational Qualifications (Starting from Graduation onwards):

| S.No. | Degree                       | University                        | Year | Subjects  | Percentage                            |
|-------|------------------------------|-----------------------------------|------|---|---------------------------------------|
| 1.    | B.Sc.<br>(Non<br>Medical)    | Punjabi<br>University,<br>Patiala | 2001 | Physics, Chemistry,<br>Maths, English,<br>Punjabi   | 79.66<br><b>(Gold-<br/>Medallist)</b> |
| 2.    | M.Sc.<br>(Hons)<br>(Physics) | Punjabi<br>University,<br>Patiala | 2003 | Quantum, Statistical,<br>Condensed matter,<br>Electronics, Radiation<br>physics, Experimental<br>Techniques,<br>Mathematical physics,<br>Particle Physics | 76.12<br><b>(Gold-<br/>Medallist)</b> |
| 3.    | NET-CSIR-<br>JRF             | Qualified Dec. 2002               |      |   |                                       |
| 4.    | Ph.D.                        | Punjabi<br>University,<br>Patiala | 2007 | Radiation Physics   |                                       |

### 9. Ph.D thesis title, Guide's Name, Institute/Organization/University, Year of Award.

**Ph.D thesis title:** Study of Gamma Ray Absorption Parameters in Low Z Materials.

**Guide Name:** Dr. Gurmel Singh, Dr. Kulwant S. Thind

**Institute/Organization/University:** Panjabi University, Patiala

**Year of Award:** 2007

**10. Work experience (in chronological order).**

| S.No. | Position held      | Name of Institute   | From        | To          | Pay Scale            |
|-------|--------------------|---|-------------|-------------|----------------------|
| 1.    | Lecturer (regular) | DAV College Abohar  | 27.06.2004  | 03..07.2006 | Rs. 8000-13500       |
| 2.    | A.P. (Physics)     | Punjabi University College of Engineering and Management, Rampura Phul  | 03..07.2006 | 04-06-2013  | 15600-39100 AGP 6000 |
| 3.    | A.P. (Physics)     | Punjab Institute of Technology, Mansa (a constituent college of Maharaja Ranjit Singh State Technical University, Bathinda) | 05- 06-2013 | 08-01-2016  | 15600-39100 AGP 8000 |
| 4.    | A.P. (Physics)     | Punjabi University College of Engineering and Management, Rampura Phul  | 08.01.2016  | 08.06.2017  | 15600-39100 AGP 7000 |
| 5.    | A.P. (Physics)     | University College, Benra   | 08.06.2017  | Till date   |                      |

**11. Professional Recognition/ Award/ Prize/ Certificate, Fellowship received by the applicant.**

| S.No. | Name of Award   | Awarding agency              | Year       |
|-------|---|------------------------------|------------|
| 1.    | State merit certificate in 10 <sup>th</sup> class   | PSEB, Mohali                 | 1996       |
| 2.    | State merit certificate for 10 <sup>th</sup> position in the order of merit of 10+2 in the punjab state             | PSEB, Mohali                 | 1998       |
| 3.    | Gold medal for 1 <sup>st</sup> Position in BSc. in Punjabi University, Patiala.                                     | Punjabi University, Patiala. | 2001       |
| 4.    | Gold medal for 1 <sup>st</sup> Position in BSc. in the subject of Mathematics in Punjabi University, Patiala. Medal | Punjabi University, Patiala. | 2001       |
| 5.    | Gold medal for 1 <sup>st</sup> Position in M.Sc. in Punjabi University, Patiala.                                    | Punjabi University, Patiala. | 2003       |
| 6.    | Qualified CSIR JRF-NET  | CSIR                         | Dec., 2002 |
| 7.    | J.R.F. under C.S.I.R at Panjabi University, Patiala.  | CSIR                         | 2003-2004. |

### Research Papers in National/International Journals:

1. Energy and chemical composition dependence of mass attenuation coefficients of building materials.  
Charanjeet Singh, **Ashok Kumar**, Tejbir Singh and Gurmel S. Mudahar  
*Ann. Nucl. Energy* **31** (2004) 1199.
2. Simultaneous effect of collimator size and absorber thickness on the gamma ray buildup factor  
Charanjeet Singh, Gurdeep S. Sidhu, **Ashok Kumar**, Parjit S. Singh and Gurmel S. Mudahar.  
*Ind. J. Pure and Appl. Phys.* **22** (2004) 475
3. Variation of photon intensities in transmitted photon spectra of  $^{60}\text{Co}$  as a function of dimensions of soil medium.  
Charanjeet Singh, Gurdeep S. Sidhu, **Ashok Kumar**, Tejbir Singh, Parjit S. Singh. and Gurmel S. Mudahar.  
*Radiation Measurements* **39** (2004) 451
4. Molar extinction coefficients for some commonly used solvents.  
**Ashok Kumar**, Sukhpal Singh, Gurmel S. Mudahar and K. S. Thind.  
*Radiat. Phys. Chem.* **75** (2006) 737.
5. Studies on effective atomic numbers and electron densities in some commonly used solvents.  
**Ashok Kumar**, Sukhpal Singh, Gurmel S. Mudahar and K. S. Thind.  
*Nucl. Sci. Engg.* **155**(2007) 1–7
6. A study of buildup factor under different geometrical conditions for 1332 keV gamma rays.  
**Ashok Kumar**, Sukhpal Singh, Gurmel S. Mudahar and K. S. Thind.  
*Asian J. Chem.* **18** (2006) 3348.
7. Mass attenuation coefficient studies in flyash materials.  
Sukhpal Singh, **Ashok Kumar**, Gurmel S. Mudahar and K. S. Thind.  
*Asian J. Chem.* **18** (2006) 3314.
8. Barium-Borate-Flyash Glasses: As Radiation Shielding Materials.  
Sukhpal Singh, Gurmel S. Mudahar, **Ashok Kumar**, Devinder Singh and Kulwant Singh Thind.  
*Nucl. Instrum. Meth. B* **266** (2008) 140-146.
9. Two media method: an alternative methodology for the measurement of attenuation coefficients of irregular shaped samples.  
Sukhpal Singh, Ashok Kumar, Kulwant S. Thind & Gurmel S. Mudahar  
*Nucl. Sci Engg.* **159** (2008) 1-8
10. Measurement of linear attenuation coefficients of irregular shaped samples by two media method.

Sukhpal Singh, **Ashok Kumar**, Kulwant S. Thind & Gurmel S. Mudahar  
Nucl. Instrum. Meth. B 266 (2008) 1116-1121

11. Effect of finite sample dimensions and total scattering acceptance angle on gamma ray buildup factor.

*Sukhpal Singh, Ashok Kumar, Kulwant S. Thind & Gurmel S. Mudahar  
Annals of Nucl. Energy 35(2008)2414-2416.*

12. Study of CSDA and extrapolated range of electrons in some selected solvents in the energy range of 0.01-100 MeV

*Ashok Kumar, B. S. Salaria, Sukhpal Singh, Balkrishan, Charanjeet Singh & Gurmel S. Mudahar  
Asian J. Chem. 10 (2009) 130.*

### **Abstracts/papers in the proceedings of Symp./Conf.**

1. GP fitting method for calculations of buildup factors of water at low penetration depth.

Charanjeet Singh, Tejbir Singh, **Ashok Kumar**, Parjit S. Singh & Gurmel S. Mudahar  
*15<sup>th</sup> Natl. Symp. Radiat. Phys. (2003).*

2. Effective atomic number studies of some low-Z materials.

Charanjeet Singh, Karamjit Singh, Tejbir Singh, **Ashok Kumar**, Parjit S. Singh and Gurmel S. Mudahar.  
*7<sup>th</sup> Pb. Sci. Cong. (2004).*

3. Effective atomic number dependence of attenuation coefficient of building materials

Charanjeet Singh, **Ashok Kumar**, Gurdeep S. Sidhu, Parjit S. Singh & Gurmel S. Mudahar.  
*7<sup>th</sup> Pb. Sci. Cong. (2004).*

4. Transmitted photon spectra of <sup>137</sup>Cs through single and double layers of soil and water.

Charanjeet Singh, Sukhpal Singh, **Ashok Kumar**, Parjit S. Singh & Gurmel S. Mudahar.  
*Natl Sym. Radiat. Meas. Appl. (2004)*

5. Study of absorption of 279 keV gamma rays in some commonly used solvents.

**Ashok Kumar**, Sukhpal Singh, Gurmel S. Mudahar and K. S. Thind  
*15<sup>th</sup> Natl. Symp. Radiat. Phys. (2006).*

6. Angular variation of intensity of scattered and total transmitted gamma radiations through a soil medium.

Charanjeet Singh, **Ashok Kumar**, Jarnail Singh, Parjit S. Singh and Gurmel S. Mudahar  
*15<sup>th</sup> Natl. Symp. Radiat. Phys. (2006).*

7. Variation of transmitted gamma photon intensity through single and double layers of high volume flyash concrete (hvfc) and water  
Sukhpal Singh, **Ashok Kumar**, Kulwant S Thind & Gurmel S Mudahar  
10<sup>th</sup> Pb. Sci. Cong. (Jalandhar) (2007).
8. Energy and chemical composition dependence of gamma ray absorption parameters in some ceramics materials  
**Ashok Kumar**, Sukhpal Singh, Kulwant S Thind and Gurmel S. Mudahar  
10<sup>th</sup> Pb. Sci. Cong. (Jalandhar) (2007).
9. An alternative methodology for the measurements of attenuation coefficients of irregular shaped samples  
Sukhpal Singh, **Ashok Kumar**, Kulwant S Thind & Gurmel S Mudahar  
Symp. Radiat. Sor. det. & App. (Patiala) (2007)
10. Attenuation coefficient measurements of aqueous solutions of some inorganic compounds  
**Ashok Kumar**, Sukhpal Singh, Kulwant S Thind & Gurmel S Mudahar  
Symp. Radiat. Sor. det. & App. (Patiala) (2007)
11. Simultaneous correlations of effective atomic numbers and buildup factor for some flyash concretes  
**Ashok Kumar** & Gurmel S Mudahar  
Natl. Symp. Radiat. Phys. Nanomat, Patiala (2011).
12. Comparative study of effective atomic numbers and buildup factor for some ceramic materials  
**Ashok Kumar**, Balkrishan & Gurmel S Mudahar  
14<sup>th</sup> Punjab Science Congress, Longowal (2011).
13. Electron densities for some selected concretes.  
**Ashok Kumar** & Gurmel S Mudahar  
2<sup>nd</sup> Natl. Conf. Advanced Mat. Radiat. Phys., Longowal (2011)
14. Trend reversal studies in in buildup factors for some selected ceramic materials.  
**Ashok Kumar**, Balkrishan & Gurmel S Mudahar  
National conference on “Global Upcomings in Environmen, Science and Technology” dated April 13-14, 2012 at PTU, Giani Zail Singh Campus, Bathinda.
15. Study of energy absorption buildup factors for biotite and mullite.  
**Ashok Kumar** & Gurmel S Mudahar  
International conference on “Emerging Trends in Physics for Environmental Monitoring and Management” dated Dec. 17-19, 2012 at Department of Physics, Punjabi University, Patiala.
16. Computations and studies on mass attenuation Coefficients, effective atomic numbers and energy Exposure buildup factors for glass

**Ashok Kumar**, Charanjeet Singh, Rakesh Kumar, Balkrishan, Sukhpal Singh, Gurmel S. Mudahar

International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (October 3-6, 2013), Punjab Technical University, Jalandhar-Kapurthala Highway, Kapurthala, Punjab-144601 (INDIA)

17. Energy and chemical composition dependence of mass attenuation coefficients of flyash concrete materials.

Balkrishan, Rakesh Kumar, **Ashok Kumar**, Gurmel S. Mudahar  
International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (October 3-6, 2013), Punjab Technical University, Jalandhar-Kapurthala Highway, Kapurthala, Punjab-144601 (INDIA)

### **List of Symposia/Conferences/Workshops attended**

1. Attended “15<sup>th</sup> National Symposium on Radiation Physics at Bhaba atomic Research Centre at Bombay in 2003 and presented the research paper.
2. Attended “National Symposium on Radiation Measurements and Applications” at Punjabi University Patiala in 2004 and presented the research paper.
3. Attended “Workshop on Computer Training in Physics” at department of Physics, Punjabi University Patiala in 2004.
4. Attended “16<sup>th</sup> National Symposium on Radiation Physics at IGCAR, Chennai in 2006 and presented the research paper.
5. Attended “11<sup>th</sup> Punjab Science Congress” at Thapar University, Patiala in 2008 and presented the research paper.
6. Attended “National Symposium on Radiation Physics and Nanomaterials at Physics Department, Punjabi University Patiala in 2011 and Presented a research paper.
7. Attended “14<sup>th</sup> Punjab Science Congress” at SLIET, Longowal in 2011 and presented the research paper.
8. Attended “2<sup>nd</sup> National Conference on Advance Materials and Radiation Physics” at SLIET, Longowal in 2011 and presented the research paper.
9. Attended UGC sponsored National Seminar on “MNREGA: Its Implementation Problems and Remedies” dated 19<sup>th</sup> Feb., 2011 at Sant Baba Attar Singh Khhalsa College, Sandaur.
10. Attended National conference on “Global Upcomings in Environmen, Science and Technology” dated April 13-14, 2012 at PTU, Giani Zail Singh Campus, Bathinda.
11. Attended international conference on “ Emerging Trends in Physics for Environmental Monitoring and Management” dated Dec. 17-19, 2012 at Department of Physics, Punjabi University, Patiala.
12. Attended, “International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering”, (October 3-6, 2013), Punjab Technical University, Jalandhar-Kapurthala Highway, Kapurthala, Punjab-144601 (INDIA)