

## DR. PAUL SINGH

Professor of Physics

Department of Chemistry & Physics,  
CCS Haryana Agricultural University,  
HISAR -125 004, India

Tele (off) +91-1662-289427

Mobile: +91-9416355487

E-mail: [spaul@hau.ernet.in](mailto:spaul@hau.ernet.in) ;

[psmehla@gmail.com](mailto:psmehla@gmail.com)

**Home address:** 180, PLA, Sector 15,  
Hisar- 125001

Tele +91-1662-240965 (Residence)



**Field of Specialization:** Solid State Nuclear Track Detectors as Nuclear Track Filters

### Academic record:

**Ph.D.** Physics, 1990, Kurukshetra University, Kurukshetra, India.

**M.Sc.** Physics, 63%, 1985, Kurukshetra University, Kurukshetra, India.

**B.Sc.** Non-medical, 56.3%, 1983, Kurukshetra University, Kurukshetra, India.

### Employment record:

Professor of Physics, Dept. of Chemistry & Physics, CCS HAU, Hisar (Sept.06)

Assoc. Prof., Dept. of Chemistry & Physics , CCS HAU, Hisar (1998-06)

Asstt. Prof. , Dept. of Chemistry & Physics, CCS HAU, Hisar (1989-98)

## Research Highlights:

### Papers Published in International Journals

1. On the variation of electrical conductivity with temperature and concentration of some etchants used in electrolytically controlled etching of nuclear track filters.  
**Paul Singh, S.K. Chakarvarti and N. Singh. Nucl. Track & Radio, Meas., Vol.15, Nos.1-4, p.305, 1988**
2. Electrolytical studies of submicroscopic pores in UV irradiated Makrofol nuclear track filters. **Paul Singh, N. Singh and S.K. Chakarvarti. Int. J. Appl. Radiat. Isos., Vol.40, No.3, p.239, 1989.**

3. Optical transparency of Makrofol nuclear track filters. **Paul Singh, N. Singh and S.K. Chakarvarti.** Received on Oct 1988 for publication in **Radiation Effects.**
4. 58 Ni ion track registration in cellulose nitrate, CN-85. **Paul Singh, N. Singh and S.K. Chakarvarti.** Nucl. Instrum. & Methods in Phy. Res. **B36, p.211, 1989.**
5. Makrofol nuclear track filters: Pore size distribution improvement. **Paul Singh, N. Singh and S.K. Chakarvarti.** GSI Report, Darmstadt., FRG, **p.246, 1988.**
6. Thermo-electret studies of CR-39 (DOP). **Azad Singh, Paul Singh, V.P. Singh and N.Singh** Acta Polymerica, Vol.41, p.48, Nr.1., 1990.
7. Ultrasound effects on the electrolytically controlled etching of nuclear track filters. **S.K. Chakarvarti, Paul Singh, S.K. Mahna and L.V. Sud** GSI Report, Darmstadt, FRG, **p.247, 1988.**
8. On the surface charging of nuclear track filters. **S.K. Chakarvarti and Paul Singh** GSI Report, Darmstadt, FRG, **p. 1990.**

### **Papers Published in Indian Journals**

1. Thermal annealing studies of 58 Ni irradiated Lexan (Polycarbonate) nuclear track filters. **Paul Singh, N. Singh and S.K. Chakarvarti.** Indian J. Physics, **64A(5), p.361, 1990.**
2. On the pore size distribution and uniformity improvement in nuclear track filters. **Paul Singh, N. Singh and S.K. Chakarvarti.** Indian J. Physics, **64 A(5), p.367, 1990.**
3. Makrofol nuclear track filters: effect of surfactants on electrolytically controlled etching. **Paul Singh, N. Singh and S.K. Chakarvarti.** Indian J. Physics, **64 A(5), p.373, 1990.**
4. Ultrasound effects on the electrolytically controlled etching of nuclear track filters (NTF's) **S.K.Chakarvarti, Paul Singh, S.K. Mahna and L.V. Sud** Indian J. Physics **64A (3) , p.229, 1990.**
5. E-waste and its management- An Overview. **Paul Singh and Sunita Mehla** MAIMT- Journal of IT & Management, Vol.1 No.1, May2007- **October 2007.**

### **Research Papers presented and published in proc. of Conf. /Symposium**

1. Study of heavy ion tracks in phosphate glass detectors. **S.Kumar, A.K. Garg, S. Chander, Paul Singh and A.P. Sharma.** DAE Nuclear Physics Symposium, Waltair (A.P.) **India, 1986.**
2. Thermally stimulated discharge currents in CR-39 (Dop) plastic. **Azad Singh, Paul Singh, V.P. Singh and N.Singh.** Solid-state symposium, Bhopal, **India Dec.21-23, 1988.**
3. Thermal annealing studies of 58 Ni irradiated Lexan (polycarbonate) nuclear track filters. **Paul Singh, N. Singh and S.K. Chakarvarti.** 6<sup>th</sup> National Seminar on SSNTDs, Guwahati (Assam), India, **March16-18, 1989.**
4. Makrofol nuclear track filters: effect of surfactants on electrolytically controlled etching. **Paul Singh, N. Singh and S.K. Chakarvarti.** 6<sup>th</sup> National Seminar on SSNTDs, **Guwahati (Assam), India, March16-18, 1989.**
5. On the pore size distribution and uniformity improvement in nuclear track filters. **Paul Singh, N. Singh and S.K. Chakarvarti.** 6<sup>th</sup> National Seminar on SSNTDs, **Guwahati (Assam), India, March16-18, 1989.**
6. On the production and handling of single pore nuclear track filters. **Paul Singh, N. Singh and S.K. Chakarvarti.** 6<sup>th</sup> National Seminar on SSNTDs, Guwahati (Assam), India, **March16-18, 1989.**
7. Effect of heavy ion, UV and  $\gamma$ - irradiation on the optical properties of makrofol (polycarbonate). **Paul Singh, N. Singh and S. K. Chakarvarti.** 3<sup>rd</sup> National seminar on

- defects in insulating solids, Bhagalpur Univ., Bhagalpur-812007, Bihar from Nov.8-10, 1989.**
- 8 Radioactive Air Pollutants in Dwellings and Mitigation Methods. **Mahabir Nain, Paul Singh and R.P. Chauhan.** National Conference on Environmental Conservation (NCEC-2006), Birla Institute of Technology and Science (BITS), Pilani (Rajasthan), Sept. 1-3, 2006.
  - 9 E-waste and its management- An Overview. **Paul Singh** and Sunita Mehla. **Published in the Proceeding Of The National Conference On Services Management, Feb. 10,2007, pp.33-42, organized by (MAIMT), Jagadhry, Haryana.**
  10. Radon Exhalation Rates From Some Soil And Stone Samples. Paul Singh, Kapil Jindal, R. P. Chauhan, and S. K. Chakarvarti. **Poster presentation in Conference on Accelerator and Low Level Radiation Safety held at Inter University Accelerator Center, N. Delhi from April 26-27,2007pp68.**
  11. Estimation of Alpha Radioactivity In Tobacco. Mahabir Nain, **Paul Singh**, R. P. Chauhan, and S. K. Chakarvarti.**Poster presentation in Conference on Accelerator and Low Level Radiation Safety held at Inter University Accelerator Center, N. Delhi from April 26-27,2007 pp45.**
  12. Radon Exhalation Rates From Some Stone Samples Using SSNTDS . Paul Singh, Kapil Jindal Mahabir Nain, R.P.Chauhan, and S. K. Chakarvarti **Poster presentation in Conference on Fifteen National Symposium on Solid State Nuclear Track Detectors and Their Applications,June 21-23,2007 held at Department of Physics,H.N.B. Garhwal University,Badshahi Thaul Campus ,Tehri Garhwal - 249 199, India**

### **Popular science articles published in “The Tribune”**

- (i) “Stealth tech that makes planes invisible” published on May 15, 2003.
- (ii) “Antimatter that could fuel future spacecrafts” published on Aug. 28, 2003.
- (iii) “Power from Ocean’s waves” published on Oct. 02, 2003.
- (iv) “Nuclear powered aircrafts” published on Oct. 08,2004.
- (v) “Electrical damage by E-bombs” published on May 12,2006.
- (vi) “Power from the Earth’s heat” published May 26,2006.
- (vii) “Car that runs on air” published on Sept.8, 2006.
- (viii) “Power from the sky” published on Sept.29, 2006
- (ix) “Sky ramp technology to launch satellites” published on Dec.8, 2006
- (x) “Electronic tagging of humans” published on Dec.22, 2006.
- (xi) Know The Deadly E-waste published on June 18, 2007 in **“Education Times,Chandigarh Edition.**
- (xii) “Sustaining permanent life in space” on Aug.17,2007
- (xiii) “Saying goodbye to nuclear bombs” published in “The Tribune” Nov.23, 2007.
- (xiv) “Eco-friendly LED lighting” published in “The Tribune” on Dec.28, 2007.
- (xv) “Wearing the electronics” published in “The Tribune” on Feb.15, 2008.
- (xvi) “Turning walks into watts” published in “The Tribune” on May 2, 2008.

- (xvii)“The keys to identity” published in “The Tribune” on June 13, 2008.
- (xviii)“Ballooning to make solar energy viable” published in “The Tribune” on July 4,08.
- (xix)“Recreating the Big Bang in tunnel” published in “The Tribune” on Sept.12, 2008.
- (xx)“Bottlenecks in N-energy” published in “The Tribune” on Sept.26, 2008.
- (xxi)“Over to the moon” published in “The Tribune” on Oct.24, 2008.
- (xxii)“Ice that burns” published in “The Tribune” on Nov.21, 2008.
- (xxiii) “Power from farm wastes” published in “The Tribune” on Dec.5, 2008.
- (xxiv)“ Turning desert sun into electricity” published in “The Tribune” on Dec.19, 2008

## **Radio talks**

- (i) Urja aur bhinn srotch i.e.” Energy & its different sources delivered” on FM, AIR Radio, Hisar on 22.9. 2001.
- (ii) Pundubiyon ka rochak sansaar i.e. “Interesting world of Submarines” delivered on FM, AIR, Hisar on Dec. 28, 2002.
- (iii) Urja akshran i.e. “Energy Crisis” delivered on AIR, Rohtak on Nov. 2005.
- (iv)Bharat ka gaurav safal mission Chandrayaan-1 aired on FM, AIR, Hisar on Nov.12, 2008

## **Books Published**

- (i) Jaypee College Physics (Mechanics, Properties of Matter& Theory of Relativity)  
for B.Sc. First Year, July 2004.
- (ii) Jaypee College Physics (Electricity, Magnetism & Electronic Devices)  
for B.Sc. First Year, July 2004.
- (iii) Jaypee College Physics (Computer Programming, Thermodynamics &Statistical Physics) for B.Sc. Second Year, July 2005.
- (iv) Jaypee First Year Practical Physics for B.Sc. First Year, July 2005.
- (v) Jaypee Waves and Optics for B.Sc. Second Year, July 2006

## **Instructional Manuals**

- (i) Physics Practical Manual for Agricultural Engineering students, 1999.
- (ii) A Comprehensive Physics Manual for Agri. Engg.students, March 2003.
- (iii) A Comprehensive Physics Manual for Home Science students, Dec. 2004.
- (iv) A manual on Experiments in Physical Chemistry for PG students, Sept.2006.
- (v) A Manual on Nuclear Radiations: Detection and Protection, Feb. 2009.