

HARMANJIT S. SANDHU

(C):289-404-2996
E-mail:harmanjit.sandhu@yahoo.com

OBJECTIVE

Passionate professional with scientific and academic experience seeking a position preferably in radiation protection and environmental sciences

SUMMARY OF SKILLS

- Extensive experience in Radiation detection and measurement practices (Field surveys/sampling/data collection)
- Recent research experience in Internal Dosimetry, Microdosimetry & solving practical problems (data analysis/technical reporting)
- Proficient in radiation detectors' calibration and "efficiencies calculation" procedures
- An in-depth theoretical understanding and working experience of the radiation detection devices and the physics concepts
- Expertise in environmental radiometric monitoring including handling unsealed and sealed radioactive sources
- Extensive radon monitoring and data analysis experience (in air/soil/water samples)
- Profound knowledge of the WHIMS, CNSC, NSC Act, related radiation safety procedures & environmental regulations
- Experienced in conducting water quality tests (TDS, Salinity, PH, other chemical & physical tests), Chemical solvent extraction and Ion Exchange technology experiments
- A proactive team player with good organizational skills
- A fast learner and ability to work under pressure/meet deadlines

MEMBERSHIPS

- Canadian Radiation Protection Association (CRPA)-application submitted
- Life-Time Member, Nuclear Track Society of India (NTSI)
- Member, Scientific Advisory Committee (Physics), M.M. University, India (PSMMU)

ADDITIONAL TRAINING

- Worked in collaboration with Fukui University of Technology (FUT), Fukui, **JAPAN** during *Scientific Research Training* program under UOIT-FUT joint Project 2012
- Participated and presented research work (Poster) in Canadian Radiation Protection Association-Conference, Halifax, **CANADA**. 2012
- Worked in GSF-Institute of Radiation Protection, Neuherberg, **GERMANY** during *Scientific Research Training* under Indo-German Research Project 2007

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EMPLOYMENT HISTORY

POST-DOCTORAL FELLOW, FACULTY OF ENERGY SYSTEMS & NUCLEAR SCIENCE 2012-APRIL 2013
UNIVERSITY OF ONTARIO INSTITUTE OF TECHNOLOGY, OSHAWA

- Conducted Inter-comparison study of internal dosimetry and microdosimetry
- Performed environmental radioactive contamination detection experiments

INSTRUCTOR (PART-TIME), DURHAM COLLEGE, OSHAWA 2011-PRESENT

- Organized scientific tours (e.g. OPG labs trip) for students' practical skills development
- Created and introduced environmental monitoring procedures/activities/assignments
- Courses taught: Physics, Nuclear Physics and Mathematics
- Participated actively in staff development programs (e.g. Teaching Squares-2012)

INSTRUCTOR, GEORGE BROWN COLLEGE, TORONTO SEPT.-DEC. 2011

- Introduced learner centered/active learning hands-on and activity-based techniques
- Demonstrated physics laws through simple working models
- Encouraged students for basic science projects and class-activities/presentations

RESEARCH EXPERIENCE

Post-Doctorate Fellow

Faculty of Energy Systems and Nuclear Science, UOIT, Oshawa, Canada, Jan 2012-April 2013

Conducted Inter-comparison study of environmental microdosimetry and internal dosimetry for low dose exposures; Extensively used internal dosimetry softwares (eg IMBA); Focused and solved problems on environmental low dose exposure scenarios (eg. Public dose limit, Fukushima accident, animal studies at low dose); Performed environmental radioactive contamination monitoring study; Worked with HPGe/Nal detectors and proportional counters for radiation detection studies

“Variations of radon and thoron: exposure to human beings and earthquake prediction” at Department of physics, Guru Nanak Dev University, Amritsar/GSF, Germany, 2007-09

Conducted wide-ranging field work for environmental radiometric analysis; Profiling and Sampling (soil-gas, rock, ground water, indoor air etc); developed detection efficiencies correlation among active and passive devices. Got scientific training for the basic theory and working of the following instruments: Alpha Guard, Gamma ray Spectrometers (HPGe), Proportional Counter, RAD-7, SARAD, Working Level Monitors (WLMs), Condensation Particle Counter, Portable Aerosol Spectrometer, Deposition Measurement Device, Impactor Device and Plastic Track Detectors.

“Environmental Radioactivity Study around Tusham Ring Complex” at Department of physics, Guru Nanak Dev University, Amritsar, Dec. 2004-08

Performed detailed qualitative & quantitative assessment of the radioactive trace elements (^{222}Rn , ^{220}Rn , U, ^{226}Ra , ^{232}Th , ^{40}K etc), Generated their seasonal variation as well as regional distribution pattern around a geological significant granitic terrain (INDIA) and finally conducted their inhalation dosimetric analysis. Correlated various active and passive radiation detectors and gained knowledge to collect & analyze data in field & laboratory

ACADEMIC QUALIFICATIONS

Ph.D. (Physics, 2008) (ICAS Approved): Guru Nanak Dev University, Amritsar-INDIA

Thesis: Environmental Radioactivity Study around Tusham Ring Complex (Radioecology)

M.Sc. Physics (2003) (ICAS Approved): Guru Nanak Dev University (G.N.D.U.), Amritsar-INDIA

Thesis: Synthesization and Characterization of Bi based High T_c Superconductors

Major Subjects: Classical Physics, Nuclear Physics, Quantum Mechanics, Electrodynamics, Statistical Physics, Mathematical Physics, Computational Techniques, Particle Physics, Solid State Physics, Electronics, Atomic and Molecular Spectroscopy etc.

B.Sc. (2001) (ICAS Approved): Khalsa College (G.N.D.U.), Amritsar-INDIA

Major Subjects: Chemistry, Physics, Mathematics.

REFERENCES

- 1. Susan Todd**
Dean
School of Science and Engineering Technology
Durham College, Oshawa Campus, ON
2000 Simcoe St N.
Oshawa, Ontario-L1H 7K4
905-721-2000 ext 2319
susan.todd@durhamcollege.ca
- 2. Dr. Anthony Waker**
Professor
Faculty of Energy Systems and Nuclear Science
University of Ontario Institute of Technology (UOIT)
Oshawa, ON, L1H 7K4
Tel: 905-721-8668 (ext. 5520)
anthony.waker@uoit.ca
- 3. Dr. Jochen Tschierch**
Scientist & Acting Head
Helmholtz Zentrum München
German Research Center for Environmental Health (GmbH)
Ingolstädter Landstr. 1
85764 Neuherberg, GERMANY
Tel +49 89 31872763
Fax +49 89 31873363
E-mail: tschiersch@helmholtz-muenchen.de