

RESUME (Dr. Payal Bhardwaj)



Personal Information

Name: Dr. Payal Bhardwaj

Date of birth: 20th January 1982

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Contact number: 09888675661

Education:

B.Sc (Hons.) Biophysics, Panjab University, Chandigarh, (2003)

M.Sc (Hons.) Biophysics, Panjab University, Chandigarh, (2006)

PhD (thesis entitled "Modulatory effects of zinc on ovariectomized induced bone loss: Biophysical and biochemical study" Jan 2014

National level test for assistant professorship (UGC/CSIR Net) Qualified Rank: 20th (lifesciences)

Professional / research experience

Name and address of employer/institution	Date of		Designation	Nature of job
	Joining	leaving		
IMTECH, sector-39 A, Chandigarh, supervisor: Scientist GC Varshney	1.9.2006	12.08.2007	Project fellow	Research work under the project entitled "production of monoclonal antibodies against EGFR and TNF-Alpha". Hybridoma technology was used to develop monoclonal antibodies.
Panjab University, sector-14, Chandigarh, Supervisor: Prof. DV Rai	1.9.2007	31.3.2010	Project fellow	"Effects of mineral loss on electrical and structural properties of Bone". Electrical properties of bone were assessed using electrical impedance spectroscopy.

<i>Panjab University, sector-14, supervisor: Prof. ML Garg</i>	<i>9.8.2010</i>	<i>8.8.2013</i>	<i>Senior research fellow</i>	<i>Research work under the project “Modulatory effects of zinc on menopause induced bone loss and its characterization through various biophysical parameters”</i>
<i>Panjab University Prof MP Bansal</i>	<i>19.9.2013</i>	<i>31.5.2014</i>	<i>Senior research fellow</i>	<i>Molecular biology techniques under the project entitled “molecular analysis of stress response kinases in testis and its isolated cell fractions after selenium deficiency induced oxidative stress in mice.</i>
<i>Department of Biophysics, Panjab University, Chandigarh</i> <i>Department of Biophysics, Panjab University, Chandigarh</i>	<i>Sept 2014</i> <i>2019</i>	<i>2019</i> <i>continuing</i>	<i>Guest faculty</i> <i>WOS-B (DST)</i>	<i>Given molecular biology, protein engineering and technology, radiation biophysics and biomedical instrumentation to teach</i> <i>Project entitled Diagnostic potential of electrical impedance analyzer for bone health detection”</i>

Teaching

S.No.	Session	Semester/Year	Subjects taught	Undergraduate Classes	Post graduate classes	PhD Students
1.	2014-2015	Odd +even semester	Radiation Biophysics, Medical physics and functional anatomy	✓		
2.	2015-2016	Odd +even semester	Radiation Biophysics, Medical physics and functional anatomy	✓		
3.	2016-2017	Odd +even semester	Radiation Biophysics, Electron microscopy	✓	✓	
4.	2017-2018	Odd semester	Gene and Protein Engineering	✓	✓	
5.	2017-2018	Even semester	Gene and Protein Engineering	✓	✓	✓
6.	2018-2019	Odd semester	Cryobiology, molecular biology	✓	✓	✓
7.	2018-2019	Even semester	Cell and tissue culture techniques, Radiation	✓	✓	

Supervision of Bachelor/Master thesis

Yes I have guided four M.Sc .thesis during my PhD tenure and Post PhD under the supervision of Prof. ML Garg and Prof DV Rai. I have joined the Department of Biophysics as guest faculty and continuing the same, we are not allowed to supervise the MSc thesis.

PhD Supervision

N.A.

Knowledge Dissemination

N.A.

Publications

Separately list journal papers, refereed conference papers, book chapters, and other types of peer-reviewed articles

S.No	Title with page no	Journal name	ISSN No	Impact factor	first/principal/corresponding/supervisor/mentor
1.	<i>Zinc as a nutritional approach to bone loss prevention in an ovariectomized rat model. 2013 Nov;20(11):1184-93</i>	<i>Menopause: The Journal of The North American Menopause Society</i>	1530-0374	3.7	Payal Bhardwaj, Durg Vijay Rai, and Mohan Lal Garg.
2.	<i>Zinc inhibits ovariectomy induced microarchitectural changes in the bone tissue. xxx (2015) 1-8</i>	<i>Journal of Nutrition & Intermediary Metabolism</i>	12352-3859	0.73	Payal Bhardwaj , Durg Vijay Rai, Mohan Lal Garg.
3.	<i>Zinc Improves the Bone Mechanical Strength in Ovariectomized Rat Model by Restoring Bone Composition and Hydroxyapatite Crystallite Dimension 2016, 5:1</i>	<i>Vitamins and Minerals</i>	2376-1318	1.18	Payal Bhardwaj, DurgVijay Rai and Mohan Lal Garg.
4.	<i>Effect of lead toxicity on bone calcium content and morphometric parameters. 2016 Jan;4(1):177-180</i>	<i>International Journal of Research in Medical Sciences</i>	2320-6012	1.467	Payal Bhardwaj, Durg V. Rai
5.	<i>Potential of electrical impedance spectroscopy to differentiate between healthy and osteopenic bone. 2018 volume 57, 81-88.</i>	<i>Clinical biomechanics</i>	0268-0033	2.35	Payal Bhardwaj, Durg V. Rai, Mohan L. Garg and Biraja P. Mohanty.

6.	<i>Zinc in Postmenopausal Bone Loss. Ortho & Rheum Open Access J 12(4): OROAJ.MS.ID.555845 (2018).</i>	<i>Orthopedics and Rheumatology Open Access Journal (OROAJ)</i>	2471-6804	0.712	Payal Bhardwaj, Durg V Rai and Mohan L Garg
7.	<i>New insight into the effects of lead modulation on antioxidant defense mechanism and trace element concentration in rat bone. 2009; Vol. 2(1): 18–23.</i>	<i>Interdisciplinary toxicology</i>	1337-9569	1.7	Bhardwaj Payal, Harkiran Preet KAUR and Durg Vijay Rai.
8.	<i>Biophysical studies of administered Shilajit on rat bone tissue. Vol. 31(1), 27-34 (2016).</i>	<i>Indian J. Applied & Pure Bio.</i>	0970-2091		Payal Bhardwaj, Mehak Goel and Durg Vijay Rai
9.	<i>Effects of shilajit on the bone tissue of alcohol administered rats 2016; 4(1):74-80</i>	<i>Indian J. Pharm. Biol. Res.</i>	2320-9267		Payal Bhardwaj, Mehak Goel, Durg Vijay Rai.
10.	<i>Distribution and pH relationship studies in some mosses growing in polluted sites. 2019; 7(1):1-4</i>	<i>Indian J.Pharm.Biol.Res.</i>	2320-9267	-	Pathania Singh Mamta, Rao Anju, Kapila Sunita, Pathania Singh Dharendra and Bhardwaj Payal, Kumar SS.
11.	<i>HPTLC and microscopic study of Lantana camara. Vol.-7, Iss.-4 (April, 2019)</i>	<i>Scholars Journal of Applied Medical Sciences (SJAMS)</i>	2320-6691	1.57	Pathania Singh Mamta, Sharma Priyanka, Negi Diksha, Jamwal Maneesha, Pathania Singh Dharendra, Bhardwaj Payal.
12.	<i>The correlation between dielectric properties and cortical bone tissue composition: Dispersion model based analysis using electrical impedance spectroscopy</i>	<i>Journal of Clinical & Experimental Orthopaedics</i>	2471-6804	0.712	Payal Bhardwaj, Preeti Dhiman, Mohan Lal Garg, BP Mohanty.
13.	<i>Impact of zinc treatment in modulating the hematological and morphological perturbations induced in the rat erythrocytes following arsenic toxicity. TIH-18-0154</i>	<i>Toxicology and industrial health</i>	07482337	1.635	Bhardwaj Payal and DK Dhawan. (Accepted)
14.	<i>Effectiveness of zinc supplementation in containing arsenic induced acute toxicity in rat erythrocytes by modulating antioxidant defense</i>	<i>Interdisciplinary Toxicology</i>	1337-9569	1.7	Bhardwaj Payal and DK Dhawan.

	<i>system and hematological parameters</i>				
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***Books authored, which are published by -
International publishers***

S.N.	Title	Type of book (text/reference)	ISBN No. and publisher	Whether peer reviewed	No. of authors
1.	Book title: Bioelectrical Impedance Analysis Chapter: Potential of electrical impedance spectroscopy in diagnosing bone health	Text book	ISBN 978-1-83880-600-2	yes	Payal Bhardwaj and DV Rai Book edited by: Prof. Mart Min (accepted chapter for publication)

National publishers

S.N.	Title	Type of book (text/reference)	ISBN No. and publisher	Whether peer reviewed	No. of authors
1.	Trends in medical physics and biomedical instrumentation, chapter "Bioelectricity and electrical stimulation of bone	Text book (year2009)	DK agencies		Payal and DV Rai (authors of the mentioned chapter)

Development

List development / demonstration of technologies, products, patents, technology transfer etc.

I have been working in the technology development field i.e. Biomedical diagnostics since my PhD tenure. We are utilizing " impedance analyzer technique" to differentiate the healthy and osteopenic bone. We have published few papers on the pilot study and currently pursuing the same. Till now we have not filed a patent, however we are in a process of generating a patent once we will be done with few more studies.

Funding

One of the Project has been sanctioned under the Department of Science and Technology scheme WOS B category entitled" **Diagnostic potential of electrical impedance analyzer for bone health detection**" DST/WOS-B/2018/1624.

Peer Recognition

S.No.	Name of the award	Funding agency	Details of the award
1.	Senior research fellowship(SRF)	The Indian Council of Medical Research	(3/1/2/4/10-RHN to P.B.)
2.	Promotion of University Research and Scientific Excellence	Department of Science and Technology	Awarded 80,000/- for continuing research
3.	National level eligibility test for assistant professorship (UGC/CSIR)	UGC/CSIR	Secured 20 th rank

Contributions to the institute

Academic and non-academic administration, mentoring in the department and institute, setting up labs etc.

Academic administration

-Modification of the syllabus along with the senior faculty as the system has now changed to CBCS (credit based choice system)

-Designing of new practical which could corroborate with the designed

syllabus -Taking undergrad students for workshops

-Helped in organizing conferences in the department

-involvement in projects writing

Non-academic administration

-Help in various departmental curricular activities/functions that are being organized at the department level

Contributions outside the institute

Participation in national/international level committees, running short-term training courses etc.

S.No.	Membership	Other details
1.	<i>Life time membership of Biophysical society</i>	<i>Indian Biophysical Society</i>
2.	<i>Editorial board member</i>	<i>Journal of Endocrinology and Diabetes Mellitus</i>
3.	<i>Editorial team member</i>	<i>International Journal of biomedical science and engineering</i>