


## Brief Biodata

**Name: Dr. Pallavi Kushwaha**

<b>Designation:</b>	<b>Senior Scientist</b>	
<b>DP No. and Name:</b>	<b>5.04, BND Management</b>	
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<b>Email:</b>	<b>Pallavi.kushwaha@nplindia.org</b>	
<b>Date of Joining CSIR-NPL:</b>	<b>04/04/2018</b>	
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<b>Mobile (optional)</b>	-	

### Research Area/ Interest

Single crystal growth, Strongly Correlated Systems, conducting oxides, Low temperature condensed matter physics, Certified reference Materials, etc.

### Educational Qualifications

*(Please write latest qualification first)*

<b>Degree</b>	<b>Subject</b>	<b>University/ Institute</b>	<b>Year</b>
Ph.D	Study of phase separation and metastability across first order magnetic transitions”	UGC-DAE Consortium for Scientific Research, Indore, India (Thesis submitted to Devi Ahilaya Visayavidyalaya, Indore)	2012
M.Phil	Physics	Chaudhary Devi Lal University, Sirsa, Haryana, India	2007
M. Sc	Physics	Bundelkhand University, Jhansi, U. P., India	2005
B. Sc	Physics, Chemistry, Maths	Bundelkhand University, Jhansi, U. P., India	2003

### Academic / Research Experience

<b>Grade / Post</b>	<b>Institute</b>	<b>Duration</b>		<b>Research Field</b>
		<b>From</b>	<b>To</b>	
Post-Doctoral Visiting Scientist	Tata Institute of Fundamental Research, India	April 2012	Oct. 2013	Condensed Matter Physics
Post-Doctoral Visiting Scientist	Max-Planck Institute CPfS, Dresden, Germany	Nov. 2013	Sep. 2017	Condensed Matter Physics

Ramanujan Fellow	CSIR-National Physical Laboratory, New Delhi, India	Oct.2017	April 2018	Condensed Matter Physics
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### No. of Publications

No. of Publications in SCI Journals	No. of Publications in non-SCI Journals	No. of Publications in Conference Proceedings	Books	Total
40	0	12	1	

### Selected Publications

1. **Tuneable electron-magnon coupling of ferromagnetic surface states in PdCoO<sub>2</sub>** npj Quantum Materials (2022) (Accepted)
2. Probing spin correlations using angle-resolved photoemission in a coupled metallic/Mott insulator system **Science advances** **6** (6), eaaz0611 (2020)
3. Magnetic frustration and spontaneous rotational symmetry breaking in PdCrO<sub>2</sub> **Physical Review B** **100** (9), 094414 (2019)
4. Itinerant ferromagnetism of the Pd-terminated polar surface of PdCoO<sub>2</sub> **Proceedings of the National Academy of Sciences** **115** (51), 12956-12960 (2018)
5. Maximal Rashba-like spin splitting via kinetic-energy-coupled inversion-symmetry breaking **Nature** **549** (7673), 492-496 (2017)
6. Single Crystal Growth, Structure, and Electronic Properties of Metallic Delafossite PdRhO<sub>2</sub> **Crystal Growth & Design** **17** (8), 4144 (2017)
7. Hydrodynamic electron flow in PdCoO<sub>2</sub>, **Science** **351**, 1061 (2016).
8. Nearly- free electrons in a 5d delafossite oxide metal **Science Advances** **1**, e1500692 (2015).
9. Real-space visualization of thermomagnetic irreversibility within supercooling and superheating spinodals in Mn<sub>1.85</sub>Co<sub>0.15</sub>Sb using scanning Hall probe microscopy, **Physical Review B** **79**, 132402 (2009).
10. Low-temperature study of field-induced antiferromagnetic-ferromagnetic transition in Pd-doped FeRh **Physical Review B** **80**, 174413 (2009).
11. Metastability in the ferrimagnetic–antiferromagnetic phase transition in Co substituted Mn<sub>2</sub>Sb. **J. Phys.: Condens. Matter** **20**, 022204 (2008) *FTC (IOP Select)*.

### Patents

None

### Current Activities

(Not more than 100 words)

Single crystal growth of intermetallic compounds using flux method and Bridgeman technique. Oxides materials using chemical vapour transport and flux method. Study of novel materials to understand outstanding fundamental physics and their uses for futuristic device application.

### **Honour(s)/Award(s)/ Fellowship(s)**

**2019** : BND Development in the area of Cement and Building Materials by CSIR-NPL  
**2017**: Ramanujan Fellowship by SERB-DST  
**2008**: Senior Research Fellowship (SRF) sponsored by Council of Scientific & Industrial Research (CSIR), Govt. of India  
**2005** : Gold Medal in M. Sc. by Goyal Foundation, Chicago (U.S.A)

### **Contributions to AcSIR**

PhD Student: 4  
DAC Member:4

### **Membership of Professional Societies/ Institutions**

1. Committee Member, CSIR-NPL representative in MTD 33, Bureau of Indian Standards
2. Life member: Nano And Molecular Society, India
3. Life member: Metrology Society of India

### **Any other Information**

*(Not more than 100 words)*

<https://scholar.google.com/citations?user=C0PXGUgAAAAJ&hl=en&oi=ao>