


## Brief Biodata

**Name: Dr. Chandra Kant Suman**

|                                  |   |   |
|----------------------------------|---|---|
| <b>Designation:</b>              | Principal Scientist                         |  |
| <b>DP No. and Name:</b>          | Photonic materials and devices<br>Metrology |   |
| <b>DU No. and Name:</b>          | Advanced Materials Devices and<br>Metrology |   |
| <b>Email:</b>                    | sumanck@nplindia.org                        |   |
| <b>Date of Joining CSIR-NPL:</b> | 11/11/2011                                  |   |
| <b>Phone (office)</b>            | 45609487                                    |   |

### Research Area/ Interest

Organic, Perovskite semiconductor and their devices, solar cell, light emitting diodes, transistors, Oxides semiconductors thin films, 2D materials for device applications.

### Educational Qualifications

*(Please write latest qualification first)*

| Degree | Subject | University/<br>Institute   | Year |
|--------|---------|----------------------------|------|
| Ph.D   | Physics | T.M.B University,<br>Bihar | 2005 |
| M.Sc   | Physics | T.M.B University,<br>Bihar | 2000 |

### Academic / Research Experience

| Grade / Post     | Institute                                | Duration |      | Research Field  |
|------------------|--|----------|------|---|
|                  |  | From     | To   |   |
| Postdoc Fellow   | IIT Kanpur, India                        | 2005     | 2007 | Organic light-emitting diodes                         |
| Postdoc Fellow   | Seoul National University, South Korea   | 2007     | 2010 | Organic semiconductor devices                         |
| Postdoc Fellow   | TU Darmstadt, Germany                    | 2010     | 2011 | Organic thin film transistors                         |
| Scientist        | CSIR-National Physical Laboratory, India | 2011     | 2015 | Organic light emitting diodes and Organic solar cells |
| Senior Scientist | CSIR-National Physical Laboratory,       | 2015     | 2020 | Organic light emitting diodes and                     |

|                     |  |      |           |  |
|---------------------|--|------|-----------|--|
|                     | India                                    |      |           | Organic solar cells                                |
| Principal Scientist | CSIR-National Physical Laboratory, India | 2020 | Till Date | Organic, Perovskite semiconductor and 2D materials |

### **No. of Publications**

| <b>No. of Publications in SCI Journals</b> | <b>No. of Publications in non-SCI Journals</b> | <b>No. of Publications in Conference Proceedings</b> | <b>Books</b> | <b>Total</b> |
|--|--|--|--------------|--------------|
| <b>45</b>                                  | <b>1</b>                                       | <b>12</b>  | <b>2</b>     | <b>60</b>    |

### **Selected Publications**

1. ReWORM Memory Effect in PET-Metal Fiber-Based Electroconductive Yarn  
SP Khanna, S Singh, CK Suman, N Kumar, IEEE Transactions on Electron Devices 69 (8), 4236-4240
2. Magneto-electrical properties of nickel phthalocyanine thin film and its application in organic solar cells  
SS Rawat, A Rana, A Kumar, SK Swami, R Srivastava, CK Suman, Solar Energy 231, 623-629
3. Efficiency Enhancement in Organic Solar Cells by Use of Cobalt Phthalocyanine (CoPc) Thin Films  
SS Rawat, A Kumar, R Srivastava, CK Suman, Journal of Nanoscience and Nanotechnology 20 (6), 3703-3709
4. Investigation of negative magneto-conductance properties of cobalt phthalocyanine thin films  
SS Rawat, A Rana, SK Swami, R Srivastava, CK Suman, SN Applied Sciences 2 (4), 1-8
5. WO<sub>3</sub>-doped LiF as gate dielectric for p-channel vertical organic field effect transistor application  
R Verma, CK Suman, R Srivastava, Thin Solid Films 666, 156-160
6. Study of injection and transport properties of metal/organic interface using HAT-CN molecules as hole injection layer  
G Rajan, V Yadav, P Manzhi, G Chauhan, CK Suman, R Srivastava, ... Vacuum 146, 530-536
7. A vertically stacked phosphorescent multilayer organic light emitting transistor  
R Verma, V Yadav, K Kaur, MB Alam, N Singh, CK Suman, R Srivastava, RSC advances 6 (93), 90873-90877
8. Study of binary and ternary organic hybrid CdSe quantum dot photodetector  
M Ramar, S Kajal, P Pal, R Srivastava, CK Suman, Applied Physics A 120 (3), 1141-1148

9. Effect of titanyl phthalocyanine doping on opto-electrical properties of Alq3 thin films  
M Ramar, V Yadav, R Srivastava, CK Suman, Journal of Materials Science: Materials in Electronics 26 (9), 7165-7173

10 Application of 2D-MoO<sub>3</sub> nano-flakes in organic light emitting diodes: effect of semiconductor to metal transition with irradiation  
J Dagar, P Tyagi, R Ahmad, R Singh, OP Sinha, CK Suman, R Srivastava, RSC Advances 5 (11), 8397-8403

### **Patents**

### **Current Activities**

*(Not more than 100 words)*

Developments of perovskite materials for lighting applications, oxide semiconductors and 2D materials for optoelectronic device applications

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

- Brain Korea (BK21) Fellowship

### **Contributions to AcSIR**

- Associate Professor (Honorary), AcSIR Ghaziabad
  - Supervision Ph.D students (4 Nos. Perusing, 1 Nos. Completed)
  - Member of Doctoral Advisory Committees (DAC) for students

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

- Material Society of India

### **Any other Information**

*(Not more than 100 words)*