

## Jaiswal, Piyush



**PhD Institution and Year :** Materials Research Centre, Indian Institute of Science, 2015

**Date of Joining IISc :** 29th July, 2005

**Area(s) of Research :** Metal-Oxide/Carbonaceous metal-oxide films/coatings for cutting tool and opto-electronic applications, MOCVD, ALD, Microwave assisted APCVD

**Name of the Post-doctoral Fellowship :** DST fellowship

**Laboratory where currently working :** With Professor Digbijoy N. Nath

**Department :** Centre for Nano Science and Engineering

**Email address and Telephone number :** [piyush@mrc.iisc.ernet.in](mailto:piyush@mrc.iisc.ernet.in), [piyushjaiswal@gmail.com](mailto:piyushjaiswal@gmail.com),  
9482442257

**Topic(s) of Research :** Working on the fabrication of MOCVD/ALD systems and subsequent process development and deposition of (epitaxial) oxides and sulphides for Photo-detectors and High power electronic based devices

### Research Publications in IISc :

#### Publications

crystallographic texture of nanostructured ZnO thin films deposited through microwave irradiation, Brahma, Sanjaya; Jaiswal, P.; Suresh, K. S.; Lo, Kuang-Yao; Suwas, Satyam; Shivashankar, S. A., Thin Solid Films (2015), 593, 81-90. DOI:10.1016/j.tsf.2015.09.005

deposition of ultra-thin Al<sub>2</sub>O<sub>3</sub> interlayers, Chauhan, Lalit; Gupta, Suman; Jaiswal, Piyush; Bhat, Navakanta; Shivashankar, S. A.; Hughes, G., Thin Solid Films (2015), 589, 264-267. DOI:10.1016/j.tsf.2015.05.046

in the substitutional metal acetylacetonate complex (Cr<sub>1-x</sub>Ga<sub>x</sub>)(acac)<sub>3</sub>, Srinidhi Raghavan, M.; Jaiswal, Piyush; Sundaram, Nalini G.; Shivashankar, S. A., Polyhedron (2014), 70, 188-193. DOI:10.1016/j.poly.2013.12.036

cemented carbide cutting tool inserts, Jaiswal, Piyush; Sathar, Abdul; Shariff, Arshiyah; Saif, Mohammed; Dhar, Sukanya; Shivashankar, S. A., MRS Online Proceedings Library (2011), 1298. DOI:10.1557/opl.2011.495

Jaiswal, P.; Nanda, K. K.; Kukreja, L. M.; Shivashankar, S. A., MRS Online Proceedings Library (2011), 1303. DOI:10.1557/opl.2011.401

Piyush; Kunte, G. V.; Umarji, A. M.; Shivashankar, S. A., AIP Conference Proceedings (2009), 1147, 396-401. DOI:10.1063/1.3183463

### **Patents**

Vapour Deposition (CVD): Method and Apparatus, Piyush Jaiswal and S.A. Shivashankar (filed)

applications: Material and Method, Piyush Jaiswal and S.A. Shivashankar (to be filed)

### **Other accomplishments and recognition while in IISc :**

- (a) Fabrication, and Installation of a System for the Organometallic Vapor which resulted in the complete layout, and construction of an automated 6-gaseous, liquid and solid precursors currently installed at DMSRDE Kanpur.
- (b) Lead an industry-academia joint collaborative project (a DeitY controlled (pressure, temperature and chemistry) atmosphere reactor that can be sold in the indigenous and international market. It included conceptualization, analysis, simulation, design and building a extendible for the growth of other 2D materials. An integral part of it was process development using such equipment, and in studying the materials and structures so synthesized using many of the techniques with which I have gained considerable experience during my Ph.D.

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