

CURRICULUM VITAE

DR. ARUN KUMAR SINGH

Associate Professor

Department of Pure & Applied Physics,

Guru Ghasidas Vishwavidyalaya (GGV), Bilaspur (C.G), India

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ACADEMIC

Working as **Associate Professor** (from November 2019) Department of Pure & Applied Physics, Guru Ghasidas Vishwavidyalaya (GGV), Bilaspur (C.G), India

QUALIFICATIONS

Assistant Professor (INSPIRE Faculty) (December 2013 to November 2019) Motilal Nehru National Institute of Technology Allahabad, Prayagraj, India.

Post Doctoral Fellow (September 2011-November 2013) Mesoscopic Physics Laboratory and Graphene Research Institute, Sejong University, Seoul 143-747, South Korea

Ph.D. in Physics (August 2006 - June 2010)

School of Materials Science and Technology, Indian Institute of Technology (BHU), Varanasi, India.

Thesis Title : Studies of Conducting Polymers and their Nanocomposites for Schottky devices

Advisor : Prof. Rajiv Prakash

M.Sc. (Physics) (July 2002 – August 2004), Passed with first division
Specialization in Electronics, Banaras Hindu University, Varanasi, India

B.Sc. (July 1999 - June 2002), Passed with first division

Chemistry, Physics, Mathematics, V.B.S. Purvanchal University, Jaunpur, India

ACHIEVEMENTS

Academic Achievements:

- Qualified **Graduate Aptitude Test in Engineering (GATE)** Examination-2006 with All India rank 370.
- Qualified **Join Entrance Screening Test (JEST)** Examination-2006 with All India rank 166.

Awards and Fellowships

- **VIRA Young Scientist Award** In Materials Science 2017
- Financial Assistance of Rs 50000/ from **Department of Atomic Energy**, BRNS, Government of India for organizing a National conference on Advanced Nanomaterials

and their Application (ANA-2018).

- Financial Assistance of Rs 40000/ from **CSIR**, Government of India for organizing a National conference on Advanced Nanomaterials and their Application (ANA-2018).
- **International Travel Grant Award** from Department of Science and Technology (**DST**) to attend International conference “*Fifth Molecular Meeting @ Singapore*” Singapore during August 3-5, 2015.
- **DST INSPIRE Faculty Award**- from Department of Science and Technology, in July 2013.
- **Dr. D. S. Kothari Postdoctoral Fellowship**-University Grant commission (**UGC**) India in 2011.
- **Senior Research Fellowship** (from April-2011 to August 2011) (**SRF-Extended**) from Council of Scientific & Industrial Research (**CSIR**), Human Resource Development Group, India
- **International Travel Grant Award** from Department of Science and Technology (**DST**) to attend International conference “*Fifth International conference on Molecular Electronics and Bioelectronics*” (**M&BE5**) Miyazaki, Japan during March 15-18, 2009
- **Senior Research Fellowship (SRF)** from Council of Scientific & Industrial Research (**CSIR**), Human Resource Development Group, India
- **Junior & Senior Research Fellowship** (From August 2006–March 2009) from UGC India.

RESEARCH EXPERIENCE

DST-INSPIRE Faculty: (December 2013 – November 2019) - Motilal Nehru National Institute of Technology Allahabad, Prayagraj, India.

Here my works are based on *Electronic properties of organic semiconductors and Nanomaterials*.

Post Doctoral Fellow: (September 2011 to November 2013) – Graphene Research Institute, Sejong University, Seoul 143-747, South Korea.

My research work was based on *Charge Transport in Graphene/MoS₂ based devices and also the modulation of graphene/MoS₂ properties by doping*.

CSIR Senior Research Fellow (Ext): (from July-2010 to April 2011) - School of Materials Science and Technology, Indian Institute of Technology (BHU), Varanasi.

In this period, I worked on *Graphene -conducting polymer composite for electronic devices*.

Ph.D: (August 2006-June 2010) - Ph.D degree awarded on topic “*Studies of Conducting Polymers and their Nanocomposites for Schottky devices*” under the supervision of **Prof. Rajiv Prakash**.

Visiting Fellow in JAPAN:

A three month research work on characterization of conducting polymers and their applications in Schottky diode and field effect Transistor (OFET) during October 2007-December 2007

under the supervision of **Prof. Keiichi KANETO**, LSSE, **Kyushu Institute of Technology, JAPAN.**

A 10 days research work on *Organic Schottky diode* and *Organic field effect Transistor (OFET)* during March-15, 2008 to March-26, 2008 under the supervision of **Prof. Keiichi KANETO**, LSSE, **Kyushu Institute of Technology, JAPAN.**

TEACHING

- (Nov. 2019 to Continue) – Guru Ghasidas Vishwavidyalaya (GGV), Bilaspur (C.G), India.

EXPERIENCE

- (from December 2013 to November 2019) - Motilal Nehru National Institute of Technology Allahabad, Prayagraj, India.

PH.D

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SUPERVISION

Supervising **One Ph.D. Student** (Mr. Vivek Chaudhary).

RESEARCH

- Electronic and Optoelectronic Properties of Materials
- Charge transport in Nanomaterials and Organic Semiconductors
- Applications of Materials in Electronic Devices
- Metal-Semiconductor Interfaces and Physics of Electronic Devices
- Conducting Polymers
- Organic/Molecular electronics
- Mesoscopic Physics

INTEREST

SKILLS

Experimental Techniques:

- Transfer of exfoliated graphene on pattern electrode(0.2 μ m)
- Transfer of CVD graphene on any desired substrates.
- Electron beam Lithography and Photolithography.
- Chemical and Electrochemical Synthesis of Conducting polymers and its Nanocomposites.
- X-Ray Diffraction.
- Atomic Force Microscope.
- Semiconductor Parameter Analyzer
- Scanning Electron Microscope.
- Raman and U.V. Visible Spectrophotometer.
- Vacuum Coating Unit.
- C H Instrument.

MEMBERSHIP

- Life Member of **Materials Research Society, India.**
- Life Member of **Indian Science congress Association, India**
- Life Member of **Electron Microscope Society of India**
- Life Member of **Indian Association of Physics Teachers, India**
- Life Member of **Indian Physics Association, India.**

PROJECT

DST Sponsored Project, Amount-35 Lakhs, Status-Ongoing from Dec 2013.

CONFERENCE ORGANIZED

CONVENER of National conference on “*Advanced Nanomaterials and their Applications (ANA-2018)*” @MNNIT Allahabad, held during December, 21-23, 2018.

RESEARCH PUBLICATIONS

International Journals = **37**, Paper presented in conferences = **30** papers
Total Citations= 870, h-index = 19, i-10 Index=27
(*Scientific Report, Advanced Functional Materials, Journal of Materials Chemistry, ACS Applied Materials and Interfaces, IEEE Electron Devices letters, JAP, JPCM, Jpn. JAP, JPC- C, RSC Advances, Sensor and Actuators-B.....Many more.*)

REVIEWERS

Organic Electronics, ACS Applied Nanomaterials Interfaces, Journal of Applied Polymer Science, Materials Science and Engineering-B, New Journal of Chemistry, Journal of Applied Physics, Superlattices and Microstructures ... etc

REFERENCES

- **Prof. Rajiv Prakash**, Professor
School of Materials Science and Technology,
Indian Institute of Technology (BHU),
Varanasi - 221005, India.
Email: rprakash.mst@iitbhu.ac.in
Phone No: (Mobile) 91-9935033011, (Off.) 91(0542)-2307047
Fax: 91(0542)- 2368707
- **Prof. Jonghwa Eom**, Professor
Mesoscopic Physics Laboratory, Graphene Research Institute,
Department of Physics, Sejong University,
Seoul-143-747, South Korea
Email: eom@sejong.ac.kr, Phone +82-10-4037-3794
- **Prof. A. C. Pandey**, Professor
Director, Inter University Accelerator Centre (IUAC), Aruna Asaf Ali Marg,
New Delhi- 110067
Email: dr.avinashcpandey@gmail.com Phone No: 09415215512

Personal Details

Name- Dr Arun Kumar Singh
S/o- Late Shri Prabal Pratap Singh,
Date of Birth- 1st July 1983
Nationality – Indian
Mobile No -9454060837

FULL LIST OF PUBLICATIONS

PUBLICATIONS IN REFEREED JOURNAL

- 1) Vivek Chaudhary, Rajiv K. Pandey, Rajiv Prakash, Naresh Kumar and **Arun Kumar Singh*** “Highly aligned and crystalline poly(3-hexylthiophene) thin films by offcenter spin coating for high performance organic field-effect transistors”. **Synthetic Metals** 258, 116221, 2019. (I.F.= 2.9) ISSN/ISBN No 0379-6779
- 2) Anand Kumar Singh, Vivek Chaudhary, **Arun Kumar Singh*** and SRP Sinha “Effect of TiO₂ nanoparticles on electrical properties of chemical vapor deposition grown single layer graphene”. **Synthetic Metals** 256, 1-6, 2019. (I.F.= 2.9) ISSN/ISBN No 0379-6779
- 3) Vivek Chaudhary, Naresh Kumar and **Arun Kumar Singh*** “Solubility dependent trap density in poly(3-hexylthiophene) organic Schottky diodes at room temperature” **Synthetic Metals** 250, 88–93, 2019. (I.F.= 2.9) ISSN/ISBN No 0379-6779
- 4) **Arun Kumar Singh,*** P. Kumar, D. J. Late, Ashok Kumar, S. Patel, Jai Singh “2D Layered Transition Metal Dichalcogenides (MoS₂): Synthesis, Applications & Theoretical Aspects” **Applied Materials Today**, (I.F.= 8.0) Vol, 13, pp-242-270, 2018. ISSN: 2352-9407 Citation= 13
- 5) **Arun Kumar Singh***, Rajiv K. Pandey, Rajiv Prakash and Jonghwa Eom "Tailoring the charge carrier in few layers MoS₂ field-effect transistors by Au metal adsorbate" **Applied Surface Science**. Vol, 437, pp-70-74, 2018. (I.F.=5.1) ISSN= 01694332 Citation= 7
- 6) Vivek Chaudhary, Rajiv K. Pandey, Rajiv Prakash and **Arun Kumar Singh*** “Self-assembled H aggregation induced high performance poly (3-hexylthiophene) Schottky diode” **Journal of Applied Physics** Vol. 122, pp.225501, 2017. (**Selected for Editor's picks of Journal**) (I.F.=2.3) Citation= 5
- 7) Shaista Andleeb, Jonghwa Eom, Nabila Rauf Naz, **Arun Kumar Singh*** “MoS₂ field effect transistor with graphene contacts.” **Journal of Materials Chemistry C** Vol.5, pp. 8308, 2017.(I.F.=6.7) ISSN /ISBN No. 2050-7526 Citation= 12
- 8) **Arun Kumar Singh**, Chanyong Hwang and Jonghwa Eom “Low-Voltage and High Performance Multilayer MoS₂ Field-effect Transistors with Graphene Electrodes.” **ACS Applied Materials & Interfaces**, 8 (50), pp 34699–34705, 2016. (I.F.=8.5) ISSN/ISBN No. 1944-8244 Citation=10
- 9) S. Hussain, J. Singh, D. Vikraman, **Arun Kumar Singh**, M. F. Khan, P. Kumar, D. Choi, W. Song, K An, J. Eom, W.Gyu Lee, and J. Jung “Large-area, continuous and high electrical performances of bilayer to few layers MoS₂ fabricated by RF sputtering via post-deposition annealing method”. **Scientific Report** (Nature Publishing Group) Vol.6, pp- 30791, 2016. (I.F.=5.5). ISSN/ISBN No.

2045-2322 Citation= 28

- 10) Shashi Tiwari, **Arun Kumar Singh**, S. K. Balasubramanian, W. Takashima, Rajiv Prakash “Poly-3-hexylthiophene (P3HT)/Graphene Nanocomposite Field-Effect-Transistor as Ammonia Detector”. **Journal of Nanoscience and Nanotechnology**, Vol.16, pp. 9634-9641, 2016. (I.F.= 1.3) ISSN/ISBN No.1533-4899 Citation=7
- 11) **Arun Kumar Singh***, Shaista Andleeb, Jai Singh and Jonghwa Eom “Tailoring the electrical properties of multilayer MoS₂ transistors using ultraviolet light irradiation”. **RSC Advances**, Vol.5, pp.77014–77018, 2015. (I. F.=3.0) ISSN/ISBN No. 20462069 Citation= 10
- 12) Shaista Andleeb, **Arun Kumar Singh** and Jonghwa Eom “Chemical doping of MoS₂ multilayer-by p-toluene sulfonic acid” **Science & Tech Advanced Materials**.Vol.16, pp. 035009, 2015(I.F.= 2.6) ISSN/ISBN No. 1878-5514 Citation= 26
- 13) Rajiv K. Pandey, **Arun Kumar Singh**, and Rajiv Prakash “Directed Self Assembly of Poly (3, 3''-dialkylquaterthiophene) Polymer Thin Film: Effect of Annealing Temperature”**J. Phys. Chem. C** Vol. 118, pp.22943–22951, 2014.(I.F.= 4.5) ISSN/ISBN No. 1932-7447 Citation= 24
- 14) Rajiv K. Pandey, **Arun Kumar Singh**, C. Upadhyay, and Rajiv Prakash “Molecular Self Ordering and charge Transport in Layer by Layer Deposited Poly(3,3''- dialkylquaterthiophene) Films by Langmuir - Schaefer Technique” **J. Appl. Phys.** Vol.116, pp.094311, 2014. (I.F.= 2.3)ISSN/ISBN No. 0021-8979 Citation= 17
- 15) **Arun Kumar Singh**, Shaista Andleeb, Jai Singh, Hoang Tien Dung, Yongho Seo and Jonghwa Eom “Ultra Violet Light Induced Reversible and Stable Carrier Modulation in MoS₂ Field Effect Transistors” **Advanced Functional Materials** Vol. 24, Issue 45, pp. 7125–7132, 2014. (I.F.=15.6) ISSN/ISBN No. 1616-3028 Citation= 30
- 16) Bhavana Gupta, **Arun Kumar Singh** and Rajiv Prakash “Influence of monomer concentration on polycarbazole & polyindole (PCz&PIIn) copolymer properties: Application in Schottky diode” **Solid State Sciences** Vol. 35, pp.56-61, 2014. (I.F.=2.1) ISSN/ISBN No. 1293-2558. Citation= 07
- 17) Shashi Tiwari, **Arun Kumar Singh**, and Rajiv Prakash “Poly (3-hexyl-thiophene) (P3HT) /Graphene nanocomposite based Hybrid Organic Field Effect Transistor”**Journal of Nanoscience and Nanotechnology**Vol.14,pp. 2823–2828,2014.(I.F.=1.35)ISSN/ISBNNo.1533-4899 Citation=12
- 18) **Arun Kumar Singh** and Jonghwa Eom “Negative Magnetoresistance in Vertical Single Layer Graphene Spin Valve at Room Temperature” **ACS Applied Materials & Interfaces** Vol. 6, pp. 2493–2496, 2014.(I.F.= 8.4) ISSN/ISBN No. 1944-8244 Citation= 31
- 19) V. K. Singh, **Arun Kumar Singh**, Muhammad W Iqbal, Jonghwa Eom, Ju-Rang Yeon, Koo Shin “Direct Synthesis of Multilayer Sheets of Reduced Graphene Oxide Over Cu-Foil” **Graphene**, Vol.1, pp.69-77, 2013. ISSN/ISBN No. 2167-275X Citation= 0

- 20) Rajiv K. Pandey, **Arun Kumar Singh** and Rajiv Prakash “Enhancement in performance of polycarbazole-graphene nanocomposite Schottky diode” **AIP Advances** Vol.3,122120,2013. (I.F.= 1.65) ISSN/ISBN No. 2158-3226 Citation= 27
- 21) **Arun Kumar Singh**, Muneer Ahmad, Vivek Kumar Singh, Koo Shin, Yongho Seo and Jonghwa Eom “Tailoring of electronic properties of exfoliated graphene layer by molecular doping” **ACS Applied Materials & Interfaces** Vol.5, pp.5276-5281, 2013. (I.F.= 8.4) ISSN/ISBN No. 1944-8244 Citation= 21
- 22) Pushpendra Kumar, **Arun Kumar Singh**, Jonghwa Eom, Jai Singh “Graphene: Synthesis, properties and application in Transparent Electronic Devices” **Reviews in Advanced Sciences and Engineering** Vol. 2, pp. 238–258, 2013. ISSN/ISBN No. 2157-9121 Citation= 32
- 23) M.W. Iqbal, **Arun Kumar Singh**, M. Z. Iqbal and Jonghwa Eom “Raman fingerprint of doping due to metal adsorbates on graphene” **Journal of Physics:Condense Matter** Vol. 24,335301, 2012. (I.F.= 2.6) ISSN/ISBN No. 0953-8984 Citation= 129
- 24) **Arun Kumar Singh**, Muhammad Waqas Iqbal, Vivek Kumar Singh, Muhammad Zahir Iqbal, Jae Hong Lee, Seung-Hyun Chun, Koo Shin and Jonghwa Eom “Molecular n-doping of chemical vapor deposition grown graphene” **Journal of Materials Chemistry** Vol.22, pp. 15168-15174, 2012. (I.F.= 6.6) ISSN/ISBN No. 1364-5501 Citation= 48
- 25) Shashi Tiwari, **Arun Kumar Singh**, Leela Joshi, Takeomi Morita, P. Chakrabarti, Keiichi Kaneto and Rajiv Prakash “ Poly-3-hexylthiophene based organic field-effect transistor: Detection of low concentration of ammonia”. **Sensors and Actuators-B** Vol. 171–172, pp. 962–968, 2012. (I.F.= 5.7) ISSN/ISBN No. 0925-4005 Citation= 78
- 26) Leela Joshi, **Arun Kumar Singh** and Rajiv Prakash “Polyindole/ carboxylated-multiwall carbon nanotube composites produced by in-situ and interfacial polymerization” **Materials Chemistry and Physics**, Vol-135, pp.80-87, 2012. (I.F.= 2.2) ISSN/ISBN No. 0254-0584 Citation= 19
- 27) **Arun Kumar Singh** and Rajiv “Organic Schottky diode based on conducting polymer-nanoclay composite”. **RSC Advances** Vol. 2,pp.5277-5283, 2012.(I.F.= 3.1)ISSN 2046-2069 Citation= 32
- 28) M. Z. Iqbal, **Arun Kumar Singh**, M. W. Iqbal, S. Seo and Jonghwa Eom “Effect of e-beam irradiation on graphene layer grown by chemical vapor deposition” **J. Appl. Phys.** Vol. 111, pp. 084307- 084311,2012. (I.F.= 2.2) ISSN/ISBN No. 021-8979 Citation= 36
- 29) **Arun Kumar Singh** and Rajiv Prakash “Synthesis of Carbon Nanotube and Nanoclay Composites of Polyanthranilic Acid and their Effects on Electronic Properties” **J. Biomedical Nanotechnology**. Vol.7 Issue 1,pp.154-155, 2011. (I.F.= 5.06) ISSN/ISBN No.154-155 Citation= 06
- 30) **Arun Kumar Singh**, P. Chakrabarti and Rajiv Prakash “Electronic Properties and Enhance Photoresponse of Electrochemically Polymerized Polycarbazole MWNTs nanocomposite/Aluminum

Schottky Contact” **IEEE Electron Device Letters** Vol.32, no-5, pp. 593-595, 2011. **(I.F.=3.1)**

ISSN/ISBN No.0741-3106 Citation= 16

- 31) **Arun Kumar Singh**, Leela Joshi, Bhavana Gupta and Rajiv Prakash “Electronic Properties of Soluble Functionalized Polyaniline (Polyanthranilic Acid)-Multiwalled Carbon Nanotubes Nanocomposite: Influence of Synthesis methods” **Synthetic Metals** Vol. 161, Issue 5, pp. 481-488, 2011. **(I.F.= 2.9)** ISSN/ISBN No 0379-6779. Citation= 16
- 32) Bhavana Gupta, **Arun Kumar Singh** and Rajiv Prakash “Electrolyte Effects on Various Properties of Polycarbazole” **Thin Solid Films** Vol. 519, Issue 3, pp.449-454, 2010. **(I.F.= 2.1)** ISSN/ISBN No. 0040-6090 Citation= 32
- 33) A.D. D. Dwivedi, **Arun Kumar Singh**, Rajiv Prakash and P. Chakrabarti “A Proposed Organic Schottky Barrier Photodetector for application in the Visible Region” **Curr. Appl. Phys.** Vol. 10, Issue 3, pp. 900-903, 2010. (Recently Highlighted by Nature Publishing Group in *Nature India* Magazine.) **(I.F.= 2.1)** ISSN/ISBN No. 1567-1739 Citation= 18
- 34) **Arun Kumar Singh**, Leela Joshi, Rajiv Prakash and Keiichi Kaneto “Influence of Synthesis Conditions on Electronic and Junction Properties of Polyanthranilic Acid - Clay Nanocomposites with Aluminum” **Jpn. J. Appl. Phys.** Vol.49, No. 1, pp. 01AD06-1-6, 2010. **(I.F.=1.45)** ISSN/ISBN No. 1347-4065 Citation= 10
- 35) **Arun Kumar Singh**, A. D. D. Dwivedi, P. Chakrabarti and Rajiv Prakash “Electronic and Optical Properties Electrochemically Polymerized Polycarbazole/Aluminum Schottky Contact” **J. Appl. Phys.** Vol.105, no.1 pp.114506, 2009. **(I.F.=2.2)** ISSN/ISBN No. 0021-8979 Citation= 51
- 36) **Arun Kumar Singh**, Rajiv Prakash, A. D. D. Dwivedi and P. Chakrabarti “Electronic Properties and Junction Behaviour of Micro and Nanometer Sized Polyanthranilic Acid / Metal Contacts.” **Synthetic Metals** Vol.158, Issues 21-24, pp. 939-945, 2008. **(I.F.= 2.9)** ISSN/ISBN No 0379-6779. Citation= 9
- 37) **Arun Kumar Singh**, Rajiv Prakash, A. D. D. Dwivedi and P. Chakrabarti, “Electronic Properties and Junction Behaviour of Polyanthranilic Acid / Metal Contacts.” **IEEE Electron Device Letters** Vol. 29, no.6, pp. 571-574, 2008. **(I.F.=3.1)** ISSN/ISBN No.0741-3106 Citation= 27

FULL PAPERS IN CONFERENCE PROCEEDINGS

- 1) **Arun Kumar Singh**, Bhavana Gupta and Rajiv Prakash “Enhancement of Specific Capacitance of Polyaniline by Secondary Metal Ion Doping” International Conference on “*Emerging Trends in Electronics and Photonics Devices & System (ELECTRO-2009)*” Department of Electronics Engineering, Institute of Technology, Banaras Hindu University, Varanasi, India during December 22-24, 2009. Citation= 1

- 2) **Arun Kumar Singh**, Rajiv Prakash, “Conduction Mechanism in Electronic Polymers: Effect of Morphology” **IEEE_sponsored 2nd National Workshop on *Advanced Optoelectronic Materials and Devices (AOMD-2008)*** Varanasi, India during December 22-24, 2008. Citation= 3
- 3) Arun Dev Dhar Dwivedi, **Arun Kumar Singh**, Rajiv Prakash & P. Chakrabarti “A Comparative Study of Polyanthranilic Acid (PANA)/Metal and Polycarbazole (PCz)/Metal Contacts for Electronic and Optoelectronic Applications” **IEEE_sponsored 2nd National Workshop on *Advanced Optoelectronic Materials and Devices (AOMD-2008)*** Varanasi, India during December 22-24, 2008. Citation= 2
- 4) **Arun Kumar Singh**, Rajiv Prakash, A. D. D. Dwivedi and P. Chakrabarti, “Ultra Low Noise Polyanthranilic Acid (PANA) /metal (Al, Ti) Schottky Contacts for UV Detection.” *Proceedings of *Advanced Optoelectronic Materials and Devices (AOMD-2007)** Varanasi, India during December 27-29, 2007.

PAPERS PRESENTED IN CONFERENCES, SEMINARS, WORKSHOPS, SYMPOSIA

- 1) **Arun Kumar Singh** “Electronic and Optical Properties of Poly(3,3'- Dialkylquarterthiophene)- MoS₂ nanocomposite” **International Conference on Electron Microscopy and Allied Analytical Techniques (EMAAT2019)** held @ Himanchal Pradesh University, Shimla, Himanchal Pradesh, India during June 7-9, 2019.
- 2) **Arun Kumar Singh** participated in QIP short term programme on “**Materials Characterizations for Engineering**” held @ IIT (BHU), Varanasi during December 24-29, 2018.
- 3) **Arun Kumar Singh** “Graphene as transparent electrodes for high performance MoS₂ Transistors” **Second International Conference on Nano Science and Engineering Applications (ICONSEA-2018)** during October 4-6, 2018 @ JNTU, Hyderabad, Telangana.
- 4) **Arun Kumar Singh** attended an International Winter Course GIAN -2017 on “**X ray Absorption Spectroscopy and its Applications to Nanomaterials**” during December 21- December 28, 2017 @ MNNIT, Allahabad.
- 5) **Arun Kumar Singh** attended an International Winter Course GIAN -2017 on “**Experimental Techniques for Nanomagnetic Materials–(ETNM 2017)**” during October 30-November 04, 2017 @ MNNIT, Allahabad.
- 6) **Arun Kumar Singh** “Tuning of Charge Carrier in Two dimensional Nanomaterials (Graphene and MoS₂)” **International conference on Advanced Engineering Functional Materials(ICAEFM-17)** held @Bhubaneswar, India during September 21-23,2017. **(Invited Speaker)**
- 7) **Arun Kumar Singh**, Rajiv K. Pandey, Rajiv Prakash “Effect of Annealing Temperature on Molecular Ordering of Poly(3,3'-dialkylquarterthiophene) Polymer Thin Film” **International conference on Advanced Materials Development and Performance (AMDP2017)** held @Pune, India during July 11-15,2017. **(Invited Speaker)**

- 8) **Arun Kumar Singh** short term course on “**Laser and its Applications (LAP-2017)**” @ MNNIT, Allahabad, India during March 27-31, 2017.
- 9) **Arun Kumar Singh** National Workshop on “**Teaching –Learning-Assessment: Techniques and Practices (TLA:TP-2017)**” @ MNNIT, Allahabad, India during March 24-25, 2017.
- 10) **Arun Kumar Singh** “Charge Carrier Modulation in Graphene Nanosheets by Doping” **ABSMSNW-17** @IIT(BHU), Varanasi, India during 19-23 February, 2017. (Oral Presentation) ISBN-978-93-86256-45-4
- 11) **Arun Kumar Singh** “Electronic and optoelectronic properties of organic semiconductors on 2D nanomaterials (Graphene, MoS₂ and WS₂)” **Interaction meet of Inspire faculties’** @Mohali, Panjab, during 10-11 February, 2017.
- 12) **Arun Kumar Singh** “Tuning the Threshold Voltage in MoS₂ Field-Effect Transistors”**International Conference on Technologically Advanced Materials & Asian Meeting on Ferroelectricity (ICTAM-AMF10)**, University of Delhi, Delhi, India, during 07–11th November, 2016. (Poster presentation)
- 13) **Arun Kumar Singh** “Light Driven Carrier Modulation in MoS₂ Field-Effect Transistors” **International Conference on Materials Science & Technology**, University of Delhi, Delhi, India, during 01–04th March, 2016. (Oral presentation)
- 14) **Arun Kumar Singh** attended “**National Workshop on Electron Microscopy and Allied Techniques**” at Delhi University during December 21-23, 2015.
- 15) **Arun Kumar Singh** “MoS₂ a Two Dimensional Nanomaterial for High Performance Thin Film Field Effect Transistors” **International Conference on Multifunctional Materials for Future Applications (ICMFA-2015)**, IIT(BHU), Varanasi, during October 27-29, 2015. (Oral presentation)
- 16) **Arun Kumar Singh**, Shaista Andleeb, Jai Singh and Jonghwa Eom “Enhanced the Performance of Multilayer MoS₂ Transistors by Ultraviolet Light Irradiation” **5th Molecular Materials Meeting @ Singapore**, held in Singapore during August 3-5, 2015. (Poster presentation)
- 17) **Arun Kumar Singh** and Rajiv Prakash “Electronic Properties of Organic Schottky Diode based on Polycarbazole Nanocomposites” **International Conference on Soft Materials (ICSM-14)**, held in Jaipur, India, during Oct 6 – 10, 2014. (Poster presentation)
- 18) **Arun Kumar Singh** and Rajiv Prakash “Electronic and Optical Properties of Organic Schottky Diode based on Polycarbazole-Multiwalled Carbon Nanotube Nanocomposite” **International Conference on Electron Microscopy and XXXV Annual Meeting of the Electron Microscope Society of India**, held in New Delhi, India, during July 9 – 11, 2014. (Poster presentation)
- 19) **Arun Kumar Singh**, and Jonghwa Eom “High performance MoS₂ Nanoflakes Thin Film Transistors” **International conference on Advance Materials and Applications (ICAMA-2014)**, Allahabad, India during March 24-26, 2014. (Oral presentation)
- 20) **Arun Kumar Singh** workshop on “Scientific contributions of Acharya Jagadish Chandra Bose & Acharya Prafulla Chandra Ray” MNNIT-Allahabad, during Dec 23-24, 2013.

- 21) **Arun Kumar Singh**, and Jonghwa Eom “Vertical Spin Valve with Single Layer Graphene at Room Temperature” *The 11th NANO KOREA Symposium*, Seoul, South Korea during July 10-12, 2013. (Oral presentation)
- 22) Jai Singh, Sajjad Hussain, **Arun Kumar Singh** “Synthesis of bi-layer graphene films on nano nickel Catalyst / SiO₂/Si by chemical vapor deposition” The 16th International Symposium on Physics of Semiconductor and Applications (ISPSA-XVI) Jeju, Korea, during July 2-5, 2013.
- 23) **Arun Kumar Singh**, and Jonghwa Eom “Modification of Electronic Properties of Transparent Chemical Vapor Deposition Graphene by Molecular Doping” *The 10th NANO KOREA Symposium*, Seoul, South Korea during August 16-18, 2012.
- 24) Jae Suk Yu, **Arun Kumar Singh**, and Jonghwa Eom “Spin transport in graphene nanodevices” “*The 7th International Conference on Advanced Materials and Devices (ICAMD-2011)*” Jeju, Korea, during December 7–9, 2011
- 25) *Workshop on Electronic and Ionic Materials and Devices (WEIMD-2011)* Under UGC Networking Programme) organized by Department of Physics, Banaras Hindu University, Varanasi, India during March 25-27, 2011.
- 26) **Arun Kumar Singh** 2nd Nation seminar on Novel Materials, Organized by School of Materials Science and Technology, IT, BHU under UGC-SAP Program, 14-15 March 2011. (Oral Presentation)
- 27) **Arun Kumar Singh** and Rajiv Prakash “Synthesis of Carbon Nanotube and Nanoclay Composites of Polyanthranilic Acid and their Effects on Electronic Properties” *International Symposium on The Safe Use of Nanomaterials & Workshop on Nanomaterial Safety: Status, Procedures, Policy & Ethical Concerns (SUN-2011)*, Indian Institute of Toxicology Research, Lucknow, India during 1-3 February 2011. (Poster presentation)
- 28) **Arun Kumar Singh** One day interaction workshop on Novel Materials, Organized by School of Materials Science and Technology, IT, BHU under UGC-SAP Program, 27th March 2010. (Oral Presentation)
- 29) **Arun Kumar Singh** and Rajiv Prakash “Effect of Nano Fillers on Electronic and Junction Properties of Polyanthranilic Acid/Aluminum Schottky Diodes” *International conference on Nano Science and Technology (ICONSAT-2010)*, Indian Institute Technology Bombay, India during February 17-20, 2010. (Poster presentation)
- 30) **Arun Kumar Singh**, Bhavana Gupta and Rajiv Prakash “Enhancement of Specific Capacitance of Polyaniline by Secondary Metal Ion Doping” International Conference on “*Emerging Trends in Electronics and Photonics Devices & System (ELECTRO-2009)*” Department of Electronics Engineering, Institute of Technology, Banaras Hindu University, Varanasi, India during December 22-24, 2009. (Oral presentation)
- 31) **Arun Kumar Singh**, Leela Joshi, Rajiv Prakash and Keiichi Kaneto “Influence of Synthesis Conditions on Electronic and Junction Properties of Polyanthranilic Acid - Clay Nanocomposites with Aluminum” *Fifth International conference on Molecular Electronics and Bioelectronics (M&BE5)* Miyazaki, Japan during March 15-18, 2009. (Poster presentation)

- 32) Arun Kumar Singh**, Rajiv Prakash, “Conduction Mechanism in Electronic Polymers: Effect of Morphology” **IEEE** sponsored 2nd National Workshop on *Advanced Optoelectronic Materials and Devices (AOMD-2008)* Varanasi, India during December 22-24, 2008. (Oral presentation)
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- 34) Arun Kumar Singh**, Rajiv Prakash, A. D. D. Dwivedi and P. Chakrabarti, “Ultra Low Noise Polyanthranilic Acid (PANA) /metal (Al, Ti) Schottky Contacts for UV Detection.” Proceedings of *Advanced Optoelectronic Materials and Devices (AOMD-2007)* Varanasi, India during December 27-29, 2007. (Poster presentation)