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Interests

- Nanofabrication, Human-Computer Interaction, Instrumentation, Microfluidics, Graphene and its derivatives, Interaction Design. Anthropology, Psychology.

Work Experience

CO-FOUNDER & TECH LEAD | LOG 9 MATERIALS | SEPT. 2015-OCT.2016

- Log 9 Materials is a startup aiming at the commercial applications of lab-scale graphene nanotechnology and manufacturing high quality nanomaterials (primarily graphene). For more details – (www.log9materials.com).
- Designed and developed PPuF - a Graphene-ceramic composite based cigarette filter which lowers the carcinogens in cigarette smoke by 60-80 % (www.ppuF.co.in).
 - Designed and fabricated a Graphene Quantum Dots (GQD) based LED and Graphene based multi-action water purification system.
 - Innovation, Interaction Design, Device Design & Fabrication.

FREELANCE INTERACTION & EXPERIENCE DESIGNER | AUG. 2014-SEPT. 2015

- Managed a wide variety of cross-media projects involving branding, illustrations, animations, products, UI-UX design and development for startups as well as industry leaders.

WEB DEVELOPER/UI-UX DESIGNER |Inst E-Shop | DEC. 2013-JULY. 2014

Inst E-Shop was an E-commerce company with focus on customized products for college students.

Education

INTEGRATED M Sc | 2013-18 | INDIAN INSTITUTE OF TECHNOLOGY (IIT), ROORKEE

- Major: Physics
- Minor: Chemistry
- Currently in 7th semester (IV Year); CGPA : 6.816/10 (Till 6th semester)

SENIOR SECONDARY SCHOOL (10+2) | 2013 | CBSE

Major in Mathematics, Physics, Chemistry, Fine Arts; (92.8% /100; 1st Rank in District)

SECONDARY SCHOOL (10TH) | 2011 | CBSE - CGPA : 10/10

Publications

- Purnendu, S. Satapathi, *Graphene-Based 3D- Xerogel as Adsorbent for Removal of Heavy Metal Ions from Industrial Wastewater*, 2016, Journal of Renewable Materials [Accepted]. ([Link](#))

Patents

- **SYSTEM AND METHOD FOR FILTRATION OF TOBACCO SMOKE USING A GRAPHENE BASED TOBACCO SMOKE FILTER**

E-106/43/2016/DEL/201611015050 – (pending)

- **DEVICE AND METHOD FOR REAL TIME THICKNESS CONTROLLED SPIN-COATING**

E-106/43/2016/DEL/201611039173 - (pending)

Projects

ORGANIC SOLAR CELLS

- *Advisor(s)* ; Dr. Soumitra Satapathi, Nipun Sawhney, IIT Roorkee

Fabricated a novel and innovative *Dye Sensitized Solar Cell - (DSSC)* using fruits like Jamun and Plum as source of dye (anthocyanin).

GRAPHENE QUANTUM DOT (GQD) BASED LED

- *Advisor(s)* Akshay V. Singhal, Log 9 Materials

Developed a new method to produce highly stable GQDs. Designed and prototyped an LED based on it.

PORPHYRIN BASED ANTI-MICROBIAL STUDY

- *Advisor(s)* ; Dr. Soumitra Satapathi, IIT Roorkee

Synthesized and explored Porphyrin Based Hierarchical Nano/Micro Assemblies based on surfactant and used it for antimicrobial study.

GRAPHENE BASED WATER PURIFIER

- *Advisor(s)* Akshay V. Singhal, Log 9 Materials

Conceptualized, developed and designed a multi layered Graphene based water purification system with different composites from sand (Silica) to Chitosan.

Skills

- Advance skills in **Design thinking**, design **softwares in both 2D and 3D** (Adobe Creative Suite and Autodesk software).
- Advance skills in **Nano-material fabrication and experimentation**: including chemical fabrication, wet-lab techniques, microfluidic control and study, photolithography, XRD, AFM and SEM scanning.
- Advance skills in **macro-scale instrumentation, prototyping and digital fabrication: 3D printing**, cutting, molding, casting, weaving ; operating most digital machines to handle plastic/composite/metal/wood.
- Medium skills in software development: **Graphics, Animation, Interface and computer vision** in Processing, **FORTRAN, MATLAB, C++, Javascript, CSS**.
- Medium skills in digital and analog circuit design, **microprocessors, fast-prototyping** as well as machine building: **hardware design and assembly**.
- Basic skills in biological engineering, **bacteria culture**.
- Fluent in spoken and written **English, Hindi** and **Maithili**-eastern Indian-subcontinent language (*mother tongue*).

Extra-Curricular Activities

- **Founding Secretary**, Design Studio-The Industrial & Product Design student group at IIT Roorkee (2016).
- **Associate Member**, Fine Arts Section, IIT Roorkee (2014-present).
- **Lead Design Manager**, Cognizance- The Annual Technical Festival of IIT Roorkee (2015-16).
- **Designer**, Cognizance- The Annual Technical Festival of IIT Roorkee (2013-15).
- **Design Head & Additional Secretary**, Kshitij- The Official Literary Magazine of IIT Roorkee.

References

Dr. Soumitra Satapathi

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