

ANKIT KUMAR

Email: akumar3@ph.iitr.ac.in

Tinkerer | Researcher | Entrepreneur

EDUCATION

GRADUATING - MAY 2020

B. TECH ENGINEERING PHYSICS, IIT ROORKEE

CGPA (Till 7th Semester): **7.4/10 (3.2/4.0)**; Applied Physics and Electronics

APRIL 2016

HIGH SCHOOL, LBS SCHOOL - NEW DELHI

95.6%, CBSE Certificate of Merit for Outstanding Scholastic Performance

EXPERIENCE

DEC 2016 – PRESENT

UNDERGRAD RESEARCHER, SATAPATHI LAB – IIT ROORKEE

- Started the Microfluidics research in the lab;
- Developed 3D printed Point-of-Care diagnosis assays;
- Developed a Microfluidic CTC liquid-biopsy device.

AUG 2017 – JAN 2019

CO-FOUNDER, LABX SCIENTIFIC

- Developed Smart Spin-Coater with real-time film thickness control and a touch-UI (built 100% of the hardware and software).

NOV 2017 – NOV 2018

JOINT SECRETARY, TINKERING LAB - IIT ROORKEE

- Conducted workshops for IIT R community on 3D printing;
- Supervised the development of online equipment-booking platform;
- Provided consultation/technical help for prototyping to IITR students.

MAY 2019 – DECEMBER 2019

RESEARCH INTERN, MCKINNEY LAB - EPFL, SWITZERLAND

- Developed hydrogel-based 3D-bioprinted Organ-on-Chip system for 3D infection timelapse studies.
- Host-pathogen interaction dynamics investigation of *M.abscessus* infection in activated and non-activated macrophages using long-term timelapse microscopy.

PATENT APPLICATIONS

- '3D Printed Peristaltic Pump with Automated Gear Assembly Fabrication'
Indian Patent App. No: **201811031020**.
- 'Cell Cytotoxicity Assay Device and Method of Manufacturing'
Indian Patent App. No: **201911036596**.

SKILLS

- Cell Culture (BSL2/P2)
- 3D Printing, 3D Bioprinting
- AFM (basic), Confocal Microscopy
- Arduino, Sensors
- CNC (3-Axis), Laser cutting
- C, C++, Python (basic), MATLAB
- COMSOL, Autodesk Fusion 360
- NI LabVIEW Core I (Certification)
- Simulink, NI Multisim, ImageJ

REFERENCES

- [Prof. Soumitra Satapathi](#)
Asst. Professor, IIT Roorkee
Email: ssphf.fph@iitr.ac.in
Phone: +91-1332-284819
- [Prof. John McKinney](#)
Full Professor, EPFL Switzerland
Email: john.mckinney@epfl.ch
Phone: +41-21-693-18-41
- [Prof. Partha Roy](#)
Professor, IIT Roorkee
Email: paroyfbs@iitr.ac.in
Phone: +91-01332-285686

RESEARCH PROJECTS

- Microfluidic System for On-Chip Cytotoxicity assay with SMD absorbance measurement.
(Indian Patent Application No: **201911036596**)
- 3D Printed Peristaltic Pump with automated gear-assembly fabrication.
(Indian Patent Application No: **201811031020**)
- Studying Host-Pathogen interaction dynamics of Mycobacterium Abscessus infection with bone-marrow derived macrophages (murine) using long-term time-lapse microscopy.
(Ongoing at McKinney Lab, EPFL)
- Developing 3D Bioprinted Organ-on-Chip Platform for 3D infection studies using time-lapse microscopy (Completed at McKinney Lab, EPFL and part of bachelors' project)
- Lab-on-Chip device for isolation of CTCs (Circulating Tumor Cells) from blood samples using magnetophoresis-based liquid-biopsy. (Ongoing at Satapathi Lab, IIT Roorkee)
- Fabrication of Smart-Spin-Coater with real-time film thickness control based on thin-film interference. (Co-founded a Startup - LabX Scientific Pvt. Ltd)

- Replacing Soft-Lithography with Multijet-3Dprinting for one-step fabrication of microfluidic moulds with sub-100-micron features.
(Being used in Satapathi Lab, IIT Roorkee for development of POC devices)