

Ankit Kumar

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EDUCATION

INDIAN INSTITUTE OF TECHNOLOGY Roorkee

Bachelors of Technology, Engineering Physics

2016 – 2020

- Graduated with First Division

École Polytechnique Fédérale de Lausanne (EPFL), Switzerland

Bachelors' Thesis, School of Life Sciences

May – Dec 2019

RESEARCH/WORK EXPERIENCE

Research Intern

May – Dec 2019

McKinney Lab, EPFL

- Developed a hydrogel-based perfusable 3D printed Lung-on-Chip model.
- Investigated host-pathogen interaction dynamics of Mycobacterium abscessus infection in bone-marrow-derived macrophages using live time-lapse microscopy.

Undergrad Researcher

Dec 2016 – Present

Laboratory for Nanophotonics and Biomaterials (Satapathi Lab), IIT Roorkee

- Founded Lab-on-Chip Systems group in the lab.
- Developed a 3D printed microfluidic on-chip cytotoxicity assay.
- Mentored 5+ undergraduate students for 3 different projects.

Undergrad Researcher

June 2018 – Present

Molecular Endocrinology Lab, IIT Roorkee

- Leading the development of a tumor cell liquid biopsy platform using a novel microfluidic flow-focusing approach.
- Initiated the development of a blood-brain-barrier model.

Joint Secretary and Co-Convenor

May 2018 – Jul 2020

Tinkering Lab, IIT Roorkee

- Supervised IIT Roorkee's additive manufacturing facilities.
- Conducted 3D printing and advanced prototyping workshops for 200+ students.
- Supervised the development of lab's online equipment booking platform.

Co-Founder and CTO

Aug 2017 – Jan 2019

LabX Scientific Pvt. Ltd.

- Co-founded the personalised nano-fabrication startup.
- Lead the development of a Smart Spin-Coater equipped with real-time film thickness control.

- Presented at more than 5 elevator pitches and startup pitch-presentations.

Mentor

2018 – 2019

Student Mentorship Program (SMP), IIT Roorkee

- Provided mentorship to 5 first-year undergraduate students in the Department of Physics during 20+ mentoring sessions.

PATENT APPLICATIONS & PRESENTATIONS

- **Kumar, A**, Satapathi, S & Indian Institute of Technology Roorkee 2018, “3D Printed Peristaltic Pump with Automated Gear Assembly Fabrication”, IN 201811031020. (Patent publication can be accessed at <https://ipindiaservices.gov.in/publicsearch>).
- **Kumar, A**, Das, N, Roy, P, Satapathi, S & Indian Institute of Technology Roorkee 2019, “Cell Cytotoxicity Assay Device and Method of Manufacturing”, IN 201911036596.
- **Kumar, A**, Nath, P, Das, N, Satapathi, S, Roy, P, “A Versatile 3D Printed Layer Sandwiching Approach with Integrated Sensing for POC Diagnostics” [Poster], MRS Virtual Spring/Fall Meeting & Exhibit 2020 (virtual; 2020, planned).

AWARDS & GRANTS

IIT Roorkee Alumni Travel Award

Apr 2019

Indian Association of Physics Teachers Award

Jan 2016

ONLINE COURSES AND CERTIFICATION

(Note: All certificates are hyperlinked)

Introduction to the Biology of Cancer by Johns Hopkins University, Finding Hidden Messages in DNA (Bioinformatics-I) by UCSD, Generative Design for Additive Manufacturing by Autodesk, LabVIEW Core-1 Certification

SKILLS

Cell Culture (BSL2/P2)
3D Printing, Bioprinting
AFM (beginner), Confocal Microscopy
Arduino, Electronics, IOT

C++, MATLAB, ImageJ Macro
COMSOL, Autodesk Fusion 360
Simulink, NI Multisim
OpenSCAD, GraphPad Prism

LANGUAGES

English ●●●●
Hindi ●●●●

French ●○○○

MEMBERSHIPS

MRS: Materials Research Society

AACR: American Association for Cancer Research
ESMO: European Society for Medical Oncology
ASCO: American Society of Clinical Oncology

REFERENCES

Prof. John McKinney

Full Professor, School of
Life Sciences. EPFL,
Switzerland
john.mckinney@epfl.ch

Prof. Soumitra Satapathi

Associate Professor, Department
of Physics, Indian Institute of
Technology Roorkee.
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Prof. Partha Roy

Professor, Department of
Biotech., Indian Institute of
Technology Roorkee.
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