

# Asif Al Noor

RF Engineer, Vancouver BC  
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## SUMMARY

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Intermediate radio frequency engineer with strong background in electromagnetics and more than 5 years of experience in developing wide range of RF components and devices from concept through to manufacture.

- In-depth knowledge of radio communication systems design, development, verification and optimization.
- Strong capabilities of antenna research, design simulation, fabrication and testing using industry-standard modeling tools: CST, ADS, HFSS, Feko.
- Experience in RF field measurements, as well as characterization and evaluation of RF products and systems.
- Strong programming and scripting skills: Python, MATLAB, C/C++.
- Extensive experience with device debugging and QC process, and lab equipment: VNA, signal generators, spectrum analyzer, oscilloscopes.
- Solid knowledge of Circuit Theory and Analysis, Electronic Circuits, Signals and Systems, Electromagnetics and Transmission Line Theory, Digital Communications Theory, Wireless Systems and Radio Frequency/Microwave Circuits.

## EDUCATION

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### University of British Columbia

MASc in Electrical Engineering. Authored 2 publications. [thesis URL](#)

Kelowna, BC

Aug. 2014 – Oct. 2016

### Islamic University of Technology

BSc in Electrical and Electronic Engineering. Co-authored 5 publications.

Dhaka, Bangladesh

Jan. 2010 – Oct. 2013

## PROFESSIONAL EXPERIENCE

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### SMT Research Ltd.

Intermediate RF Engineer

April 2020 – Present

Vancouver, BC

- Modernized, developed, tested and installed wireless system upgrade to the existing structural monitoring system to reduce installation costs while maintaining computational accuracy.
- Designed, tested and verified antenna and other components for an RF power harvesting circuit at 915 MHz. The circuit performs measurements from a battery-free sensor network.
- Pioneered custom battery-assisted RFID passive sensor tags for remote datalogging and developed an RFID based tracking system to pinpoint hidden sensor location.
- Carried out numerical analysis, software simulation to characterize electrical properties and RF propagation through various roof assemblies. Developed test setup to run field experiments and verify the characterization.
- Performed QC tests on sensors and data-loggers, and investigated circuit hardware failures.
- Installed sensors and dataloggers in active sites and provided technical support to technicians during installation.
- Drafted and edited testing procedures, reports, papers and other documents.

### Direct Kinetic Solutions

RF Engineering Consultant

Oct. 2019 – March 2021

El Paso, TX (Remote)

- Developed RF system and cubesat EPS, researched solutions, recommended equipments based on client tech.
- Produced preliminary cubesat payload concepts for clients, including antenna deployment, antenna performance, payload block diagram, link budgets, power budgets, mass budgets.
- Developed RF solutions for the US Army contract bids and wrote technical proposals within strict deadlines.
- Proposed a standard 6U CubeSat platform to obtain a high resolution (5 m colour and 3m monochromatic) image and high-definition (HD) movie for high speed ISR applications.
- Identified new product opportunities, market trends and competitiveness in the marketplace.

### Helios Wire Inc.

Lead RF Engineer

July 2017 – May 2019

Vancouver, BC

- Designed, simulated and successfully deployed CubeSat C-, X- and S-Band antennas for CubeSat data and TT&C communication. Conducted studies with a 3 ft S-band reflector antenna in the ground station.

- Performed system analysis and carried out calculations such as switch/hybrid and filter assemblies, link-budget, power budget, power flux density, mass budget analysis, etc.
- Conceptualized and modelled an outdoor-rated access point/gateway to connect to Cubesat and IoT tags.
- Committed to new product development process, such as defining product requirement documents (PRD), developing product roadmap, and producing the conceptual design.
- Interfaced with subcontractors to determine RF product requirements, negotiate prices and terms.
- Collaborated with vendors to troubleshoot antenna production as well as to purchase equipment, including Power Amplifiers, LNAs, Filters, etc., for RF subsystem.

## ACADEMIC EXPERIENCE

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### Markley Electromagnetics Research Group, UBC

Sept. 2014 - Dec. 2016

*Research Assistant*

*Kelowna, BC*

- Investigated passive electromagnetic architectures and solutions, such as optical sensors, metamaterials, antennas, frequency selective surfaces, and wireless power transfer.
- Developed and characterized a planar broadband leaky-wave antenna for planar applications using COMSOL.

*Teaching Assistant*

- Taught APSC 178 (Electricity, Magnetism, & Waves) course for two semesters, held office hours and received excellent reviews from the first year engineering students.

### Electromagnetics Research Group, IUT

Nov. 2012 - Dec. 2013

*Undergraduate Research Assistant*

*Dhaka, Bangladesh*

- Researched characteristics of Surface-Plasmon-Polariton (SPP) through various waveguides and determined the optimum design for different applications.

## SELECTED PROJECTS

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### Microwave Amplifier Design | AWR, VNA, Signal Generator

March 2015

- Designed a UHF microwave amplifier at 1 GHz using AWR microwave office and adopted it on Rogers RO4350 substrate with NXP BFR520 transistor.

### Fabrication of Graded-dielectric Materials for Antenna Applications | MATLAB, VNA

Oct 2018

- Developed a MATLAB script to produce spatially varying permittivity by drilling holes on Rogers RT/duroid 5880, TMM 3, TMM 4 and TMM 6 high frequency laminates.

## SELECTED PUBLICATIONS

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- A Geometrically Phase-Compensated Transformation Optics Superstrate for Fixed-Beam Broadband Leaky-Wave Radiation, IEEE Explore, 2019 - [publication URL](#)
- Achieving Linear Phase Through Geometrically-Compensated Transformation Domains for Leaky-Wave Antenna Radiation, IEEE Explore, 2016 - [publication URL](#)

## TECHNICAL SKILLS

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**Softwares:** ADS, HFSS, CST, KiCAD, STK

**Languages:** MATLAB, GNU Octave, Python, C/C++, Simulink, R

**Equipment:** VNA, Signal generator, Spectrum analyzer, Oscilloscope

## PROFESSIONAL AFFILIATIONS

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**Engineers and Geoscientists BC** | *Engineer-in-Training (EIT)*

2016 – Present

**IEEE Internet of Things Society** | *Member*

2018 – Present

## EXTRACURRICULAR EXPERIENCE

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### Zen Maker Lab

Oct. 2019 - March. 2020

*STEM Educator*

*Vancouver, BC*

- Designed aerospace and electronics STEM curriculum to provide kids hands-on experience real electronic components.
- Fabricated various hobby electric circuits to make 3D printed electronic toys for enthusiastic children.