



Project Proposal for Ph.D.

Project Details	
Project Title	Development of cryogenic low noise amplifier for single photon detection
Project Summary (Minimum 500 and maximum 2000 characters)	Single photon detectors require cryogenic low noise amplifiers. This require careful choice of components that can match arbitrary impedances and measure small signals without reflections. The amplifier needs to work at cryogenic temperatures that requires model development at low temperatures, silicon validation and finally testing at cryogenic temperatures. This project requires electrical engineers with intention experience in analog system design.

Ph.D. Supervisors			
Role	Name of Faculty	Academic Unit in IITD/Institute/University	Email ID (Official)
Supervisor 1	Krishna Balasubramanian	DMSE	Bkrishna@mse.iitd.ac.in
Supervisor 2	Ankesh Jain	EE	ankesh@ee.iitd.ac.in

Project requirements (Student qualifications, experience required, etc) *The candidate will be shortlisted based on common shortlisting criteria decided by ScRC (SIRe)
- Bachelors in EE/ECE. Experience in analog circuit design

Source of fellowship/funding (CSIR/UGC/DBT/ICMR/ICAR/NEET-PG/DST-INSPIRE/IRD/FITT Project details, if any)
Project Fellowship No. : RP04411G

Role of Faculty Members involved:	
Supervisor-1	Cryogenic measurement, problem definition

Supervisor-2	Analog circuit design, silicon realization and cryogenic testing.
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