



**Advertisement for Chanakya Doctoral Fellowship (PhD) position**

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| <b>Title of the Project:</b>  | High Speed Electronic and Photonic component co-design for on-chip QKD transceivers  |
| <b>Principal Investigator</b> | Dr. Emani Naresh Kumar, Associate Professor, EE Department<br>For any specific queries contact: <a href="mailto:naresh@ee.iith.ac.in">naresh@ee.iith.ac.in</a>   |
| <b>Funding details:</b>       | Chanakya Doctoral Fellowship from IHUB Quantum Technology Foundation   |
| <b>Duration:</b>              | 3 years and extendable for 1 additional year   |
| <b>About the project</b>      | <p>The current commercial Quantum Key Distribution (QKD) solutions have low key rates, limited range, high cost and are not scalable. An integrated (on-chip) QKD solution is expected to alleviate these limitations. The efforts to develop integrated QKD solutions are still nascent globally. The state-of-the-art QKD transmitters operate at a modulation speed of about 2 GHz, while 10-40 Gbps speeds are ubiquitous in modern datacom links. Clearly, there is tremendous headroom for improvements. A key differentiator in determining the overall system performance of the integrated QKD solutions is the optimal co-design of the high-speed electronic and photonic components. In this project the applicant is expected to systematically study the co-design of the electronic and photonic components for on-chip QKD transceivers. They will develop models which will help in evaluating the RF performance of photonic devices and then integrate electronic and photonic components at the board level.</p> |
| <b>Emoluments:</b>            | Rs. 37,000/- per month; No HRA will be provided;   |
| <b>Eligibility:</b>           | <ul style="list-style-type: none"><li>• Candidate should not be more than 30 years</li><li>• BTech (ECE/EE/equivalent) with a minimum 70% marks or equivalent CGPA OR Masters in VLSI/Physics/Photonics/equivalent</li></ul>   |
| <b>Requisite Experience:</b>  | <ul style="list-style-type: none"><li>• Strong fundamentals in electromagnetics, semiconductor devices, quantum mechanics and optics.</li><li>• Proficiency in programming in MATLAB/Python along with good communication and writing skills.</li></ul>  |
| <b>How to Apply:</b>          | Interested candidates may apply by filling <a href="#">this Google form</a> .<br>The advertisement will be <u>open on a rolling basis</u> till a suitable candidate is found. The Google form will not accept applications once the position is filled.  |
| <b>Selection process:</b>     | <ul style="list-style-type: none"><li>• Subject to fulfilling eligibility criteria, short-listed candidates will be informed by email. Please note that short-listing criteria may be higher than the minimum eligibility criteria.</li><li>• Shortlisting/screening of applications will be done <b>once in two weeks</b>.</li><li>• Online interviews will be held for shortlisted candidates. Please note that multiple rounds of interviews may be held.</li><li>• Only selected candidates will be informed by email.</li></ul>   |