JOB DESCRIPTION

Vacancy Ref: A3276

<table>
<thead>
<tr>
<th>Job Title:</th>
<th>Research Associate in Fabrication of Novel Millimetre Wave Traveling Wave Tubes for Future High Data Rate Networks</th>
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<td>Present Grade:</td>
<td>6P</td>
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<th>Department:</th>
<th>Engineering</th>
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<tr>
<td>Directly responsible to:</td>
<td>Professor Claudio Paoloni</td>
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<tr>
<td>Supervisory responsibility for:</td>
<td>support in supervision of PhD and final year UG/PG students</td>
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Other contacts

Dr. Rosa Letizia, Rupa Basu

Internal:
All Lancaster academic and professional staff

External:
All industry and university collaborators, scientific community

This is a two-year appointment for applied research in the field of millimetre vacuum electron devices for high data rate communications for new generation networks.

The projects aim at a breakthrough in the field of wireless high data rate networks by providing a novel solution for the exploitation of the millimetre wave spectrum for 5G networks and high speed access. The researcher will design and fabricate novel millimetre wave Traveling Wave Tubes (TWT). The work will be performed in close collaboration with the team at Lancaster and their international partners.

The group of Professor Paoloni has the full facilities for design, fabrication and test of traveling wave tubes. Training for specialists will be given where needed.

The main activities are:

- Assembly, high voltage test, beam focusing of TWTs.
- Setting and use of high voltage power supply.
- Mechanical and electrical measurements of realised TWT parts.
- Contributing to design and fabrication of parts of the TWTs, including electron gun, collector and magnetic focusing system.
- Contributing to design and simulation of novel slow wave structures (SWSs) and millimetre wave and sub-THz TWTs by three dimensional electromagnetic simulators in collaboration with the research group.
- Use of different fabrication processes such as laser welding, brazing, diffusion bonding, magnetisation, vacuum leakage test, CNC milling or LIGA process for microfabrication of SWSs. Specific training will be given.
- Procurement all the parts of the TWTs and setting fabrication setups
- RF Measurements with Vector Network Analyser (up to 220 GHz). Training will be given.

Other important activities are:

- To take responsibility of the tasks and reporting of the project
- To participate to the project meetings organised by the consortium; preparation of the report for the status of the project to be presented to seminars; preparation and presentation of talks, posters and reports to disseminate the results of the project.
- To present papers to relevant international and national conferences and workshops and contribute to journal papers.
- To contribute to the organisation of conferences, workshops and meetings.
- To assist PhD students and final year project students in the team in the development of different aspects of the research.
- To support the dissemination and exploitation of the results of the research.