Microwave-photonics and wave-matter interactions

I am looking for motivated and hardworking students to work with me on interesting and challenging research and development projects. This page consists of a list of projects in which I am actively looking for students at M.Tech and M.Tech+Ph.D. level. Before proceeding to the offered projects, please carefully read the following expectations from prospective students.

1. At least 40 hours of work per week is expected after the completion of course work.
2. You will have to submit one weekly report every week and one monthly report every month. These reports must be in a prescribed format and prepared strictly in LaTeX only.
3. There will be at least one project meeting every week (based on your weekly report) to discuss the updates.
    - I commit to give you typed comments and suggestions every week based on your report.
4. If you don't put in enough sincere efforts (*not necessarily the results*), a bad grade is guaranteed in Project-I evaluation. If your efforts (*not necessarily the results*) are not up to the expectations after fourth semester, an extension in M.Tech. project is likely, irrespective of your placement and joining date.

The time I have spent in setting up this page should give you an indication of the sincerity of the above statements.

If you are still reading and are still interested, I have a wide spectrum of projects ranging from purely theoretical to purely applied topics. Whether you are fascinated by fundamental concepts or more inclined towards experimental work, there is something on which we might work together.

1. Photonic reconfiguration of microwave devices using photoconductivity.

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2. Photonic reconfiguration of microwave devices using phase-change materials.

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3. Full wave EM and circuit modelling of coupled interconnects.

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4. Application of magnonic nano-conduits for interconnects.

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5. Novel devices based on gyrotropic material.

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6. Topology controlled Cherenkov radiation in complex medium.

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7. Reflection-less/absorptive filters.
