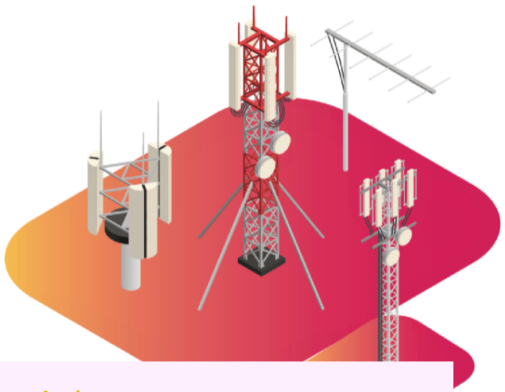
An Intelligent Robot System for Adaptive tuning of 5G Microwave Filters

#5G #Network #Data #2019



PROJECT QUICK FACTS

Principal Investigator

Prof. WU Keli

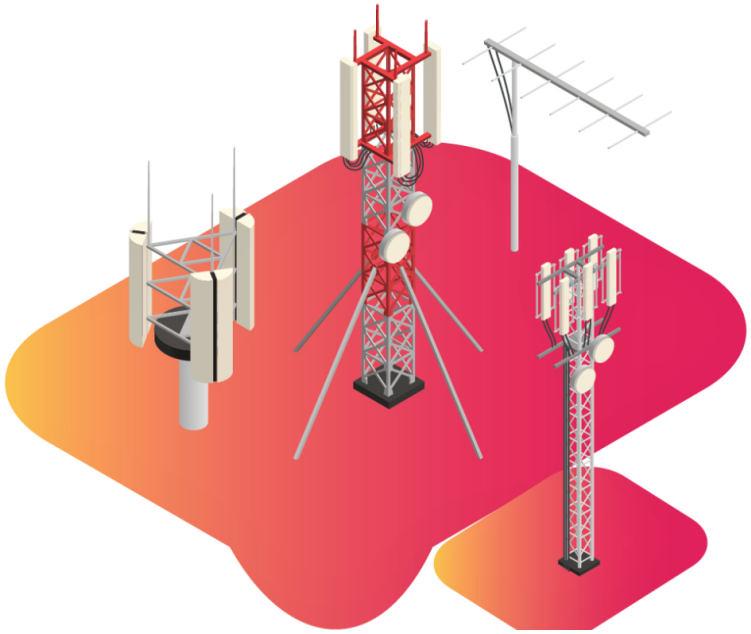
DEPARTMENT OF ELECTRONIC ENGINEERING

- **Award**
  Silver Medal, 47th International Exhibition of Inventions Geneva

With the fast evolution of mobile communication systems, microwave filters are needed in unprecedented large quantities. Slower tuning speed and the lack of experienced filter tuning technicians are two major obstacles that lead to low production capacity. This intelligent robotic filter tuning system, which employs the analytic circuit model extraction theory and guided by the adaptive optimizers, can automatically tune filters with 2-5 times tuning speed of the manual tuning process. With the combination of the advanced filter tuning algorithm and the precise mechanical tuning platform, the system will revolutionize the filter industry.

Uniqueness and Competitive Advantages:

- 2-5 times faster than manual tuning process, no manual intervention needed
- One-stop solution from the filter tuning process to full inspection for every filter
- Unique in compensating the hysteresis effect of the tuning screws and tighten filter tuning screws to meet the final filter specifications
- Unique in diagnosing manufacturing and assembling defects of each filter during the tuning process and giving explicit instructions on how to fix the problem
- Applications in 5G and future microwave cavity filters in base stations



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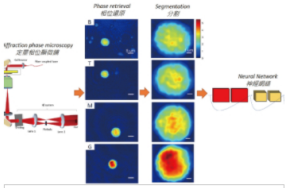

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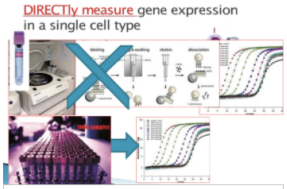

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