

Projects in Special Topics

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1. **Design of Fractional-N PLL:** The design specifications will be decided later. In the project you will learn design of high frequency and low noise VCO, High frequency programmable divider, Loop Filter and other blocks of PLL. After complete design you will learn the impact of temperature and fabrication errors on your design. The design goal will be to achieve resolution of less than 1Khz. In the project you will learn System design, Analog and Digital Circuit Design, filters design and will use concept of Control system.
2. **Design of CAD tool for automation of Sigma-Delta DAC/ADC design:** Designing the automation tool for sigma-delta based DAC/ADC design. The project will be done using MATlab. Presently there is no freely available tool to do this kind of automation. Your work will be taken as a contribution to VLSI designers' community. By this project you will learn designing EDA tools, Digital Filters design and will use advanced concepts of control systems.
3. **Mathematical modeling of Sigma-Delta system:** In sigma delta based system still there exist problems in modeling its functionality. Existing models are not accurate enough to cover all kind of systems. So your work will be new in this field. In this project you will learn how to model any system to reduce computation complexity.