

Training Course: Microfabrication Process Engineering using XperiDesk

Process Engineering in XperiDesk follows best practices used in Industry. Proven product development methodologies are used to guide the engineer from idea to product. The platform fosters organization wide knowledge management in engineering organizations by its collaborative nature.

This training course will motivate a methodological approach for Process Engineering. Giving an overview of the methods and highlighting the key tenants of the best practices, the course teaches systematically the practical usage of XperiDesk to fulfill process engineering tasks. Adjacent techniques from areas such as DoE, 8D and lean six sigma are woven into the steps and anchor points for applying these to solve problems will be highlighted and showcased.

Key issues of the training

- Understanding general approaches in technology development methodologies & techniques
- Understanding and applying XperiDesk development methodology
- Gain basic understanding of the usefulness and application of DoE, 8D and Six Sigma
- Predicting the effect of a given process step (and its variability) on overall yield and manufacturability.
- Evaluating how a new mask design might affect the outcome of a previously developed process.
- Synthesizing aspects of device design and process engineering.

Methodology baselines for collaborative engineering

- Understanding basic principles of process / product engineering
- Learning essential tools for asking the right questions
- Gain basic understanding of methodology blueprints

Designing / Amending a manufacturing flow

- Using abstract process flow design to create manufacturing flows from scratch
- Identifying key considerations of selecting specialized process steps to specify an abstract process flow (e.g., pre-existing topography).
- Learning to iteratively evolve existing process flows

Virtually verifying new / amended process flows

- Using DoEs to understand and verify process behavior
- Determining manufacturability using XperiDesk
- Using XperiDesk consistency checks to increase the fab readiness of a process flow.
- Understanding the utility of simulators to visually communicate design intent (e.g., softMEMS) and to predict process success.

Tracking & Tracing

- Performing manual / electronic tracking & tracing of experiments
- Understanding why and how to systematically and comprehensively collect experiment information
- Setting-up automatic collection and arranging of data into information
- Retrieving & analyzing data and Information

Methods

The training course consists of lecture, exercises, and practical training.