High Power Fiber Lasers

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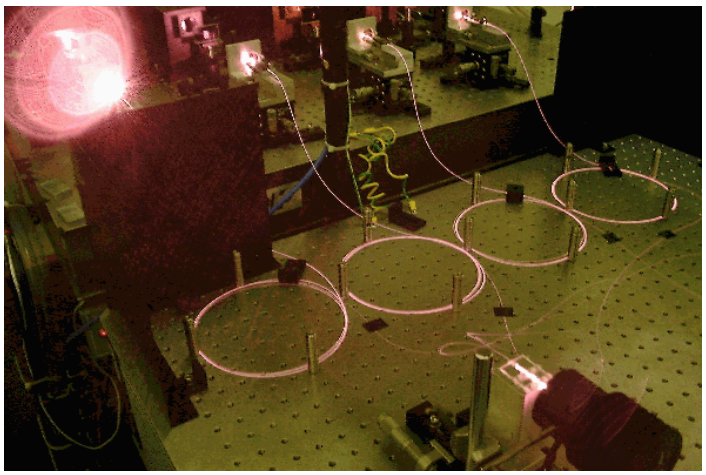
Intended Audience:

This course is intended for individuals with a basic knowledge of lasers and optics who wish to learn about the principles and capabilities of fiber lasers and amplifiers when operating at high power levels. The course will also cover some of the practical issues of operating these devices and provide an update for those wishing to learn about some of the latest developments in this rapidly advancing field.



Benefits and Learning Objectives:

This course should enable the participants to:

- Calculate threshold pump power and slope efficiency, and estimate the maximum output power that can be obtained from a given fiber laser oscillator or amplifier configuration.
- Select the optimum pump source for a given rare earth ion transition and fiber design.
- Design the pump light collection and coupling scheme and estimate the pump launch efficiency.
- Specify the fiber parameters (e.g. cladding design, core size, rare earth ion concentration) required for a particular laser or amplifier configuration.
- Design the fiber laser resonator and amplifier and select the operating wavelength.
- Estimate thermally induced damage limit.
- Estimate the power scaling limit.
- Measure fiber laser performance characteristics and relate these to fiber design and resonator parameters.