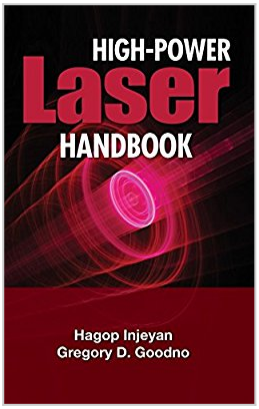


# High Power Laser Handbook (Mechanical Engineering)

*By Hagop Injeyan, Gregory Goodno*



**High Power Laser Handbook (Mechanical Engineering)** By Hagop Injeyan, Gregory Goodno

**The State of the Art in High-Power Laser Technology**

Filled with full-color images, *High-Power Laser Handbook* offers comprehensive details on the latest advances in high-power laser development and applications. Performance parameters for each major class of lasers are described. The book covers high-power gas, chemical, and free-electron lasers and then discusses semiconductor diode lasers, along with the associated technologies of packaging, reliability, and beam shaping and delivery. Current research and development in solid-state lasers is described as well as scaling approaches for high CW powers, high pulse energies, and high peak powers. This authoritative work also addresses the emergence of fiber lasers and concludes by reviewing various methods for beam combining.

**Coverage Includes:**

- Carbon dioxide lasers
- Excimer lasers
- Chemical lasers
- High-power free-electron lasers
- Semiconductor laser diodes
- High-power diode laser arrays
- Introduction to high-power solid-state lasers
- Zig-zag slab lasers
- ThinZag high-power laser development
- Thin disk lasers
- Heat capacity lasers
- Ultrafast solid-state lasers
- Ultrafast lasers in the thin disk geometry
- The National Ignition Facility laser
- Optical fiber lasers
- Pulsed fiber lasers
- High-power ultrafast fiber laser systems
- High-power fiber lasers for industry and defense

- Beam combining

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## Editorial Review

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**Hagop Injeyan, Ph.D.,** recently retired from Northrop Grumman Space Technology, where he was employed since 1982 and had been a Technical Fellow since 1999. He is currently a faculty member at California State University, Los Angeles. Dr. Injeyan holds 22 U.S. patents and has more than 20 publications in international scientific journals and proceedings.

**Gregory D. Goodno, Ph.D.,** has been employed with Northrop Grumman Aerospace Systems since 1999 as a researcher in solid-state and fiber lasers. He holds two U.S. patents with several more pending and has more than 50 publications in international scientific journals and proceedings.

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