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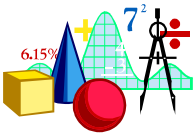
Antioch Systems

Technical Consultants



"...our goal is to help companies move from research and product definition into full production."

Consulting Services

If you are working with products, process equipment or production tooling that involves optics, opto-mechanics, lasers, CCD imaging, fiber optics, or image processing, Antioch Systems is able to help you succeed in meeting your goals. We have the expertise, the design tools, and laboratory equipment to begin working immediately on your requirements.

For example, in one case, we were asked to, not only design an optical module for use in a bio-medical product, but, also, to help establish a lab with the appropriate equipment. Before the company had even rented a facility, we were able to begin specifying and ordering optics and equipment. As a result this client was able to ship it's first prototype within just 4 months.

In the area of low-cost, high-volume products, Antioch Systems was able to provide broad technical support to another startup whose "virtual-corporation" business philosophy calls for nearly all product design, prototyping, and manufacturing to be done on a contract basis. For this consumer-electronics product, which will be sold in volumes of several million per year, cost is important and Antioch Systems' expertise with molded, plastic optics was very valuable.

If you have an immediate design requirement, but the in-house personnel, facilities, or equipment are not presently available, let us take a look at where we might help.

Technical Expertise

OPTICS- Antioch Systems now has the capability to design special-requirement lenses, or multi-component, optical systems using catalog optics. We have well over 1000 hours of working experience with ZEMAX ray-trace software (see our web page for a link to Zemax).

OPTO-MECHANICS- We offer fast, beginning-to-end design capabilities for optical systems. Antioch Systems has the in-house ability to do not only theoretical optical design and ray tracing, but also the design of the mechanical mounts, adjustable fixtures, and motion systems that make an optics module complete. We produce complete, detailed, shop-ready specifications and drawings of both optical and mechanical components. These can be ordered from your preferred vendor or a vendor we recommend.

DIODE LASERS- We have designed very cost-effective products using ultra-low-cost diode lasers of the type used in CD players. We understand the unique design and handling requirements for these lasers and are acquainted with the top vendors for these products.

FIBER OPTICS- Antioch Systems has extensive experience in designing optical systems that maximize the light throughput of fibers. We understand how to model diode lasers and extended sources for this application.

NEW CAPABILITIES

- We're on the net!
- Full e-mail, file transfer, Internet functions.

New areas of expertise:

- Process equipment, film monitors, etc. for computer hard disks.
- Low-cost, plastic optics.
- Complete lens design: aspherics, toroidal, etc.
- Diode laser/fiber optic systems.
- Molded plastic parts for high-volume consumer products.
- Opto-mechanical design system concept to shop ready drawings

Value Received

How some of our clients have benefited-

"Pending additions to electrical safety regulations caused customer demand for certain circuits to be added to our laser power supply, but space available in their equipment dictated that we maintain an existing form factor. We did not have the in-house resources to tackle this design challenge and bids from other consultants did not meet our schedule and cost containment requirements. Dick did an outstanding job on this contract."

Kurk Mathews, Project Leader
Uniphase Corporation

"During the formative stages of our company, I was asked to locate a consultant to help with optical design and problem solving. Dick Johnson was the best qualified candidate and, for nearly two years, has been extremely valuable to us. In a startup situation versatility is very important and Dick has gone well beyond my initial expectations. He has done a superb job of designing an injection molded plastic lens and contributing to the selection of fiber optics. Beyond that, he made an excellent contribution to the design of injection molded plastic parts used in our consumer electronics product."

Edward M. Buckley, Vice President
CMC Technologies, Inc.

PERSONAL BACKGROUND

Dick Johnson, owner and principal consultant, has over 20 years of experience in designing optical systems. He has developed over a dozen, successful, commercial products. After receiving a B.S., M.S., and Ph.D. in electro-optics from the University of Illinois, Urbana, Dick worked for Harris Corp., where he developed image processing and recording equipment. Later, at Spectra-Physics Corp., he designed a variety of products ranging from ultra-short-pulse lasers for research to low-cost, OEM lasers used in printing.

As one of the founders of a startup company, Dick did the system and optical design of a high-brightness, video projection system using a novel liquid crystal light valve. As engineering manager, he was responsible for establishing cleanroom facilities and for specifying and purchasing vacuum deposition systems.

Consulting jobs have included the design of an optical system for a medical product used in ophthalmology, a CCD imaging system, packaging and heat flow design of a two kilowatt power supply, optical monitor of liquid turbidity, optical module design for computer hard-disk process equipment, and the design of low cost optics and molded plastic parts for a consumer electronics product.

Using AUTOCAD for mechanical design and ZEMAX ray trace software for the design of lenses and optical systems, Dick is able to provide a complete, beginning-to-end design service from theoretical analysis to shop-ready mechanical drawings.