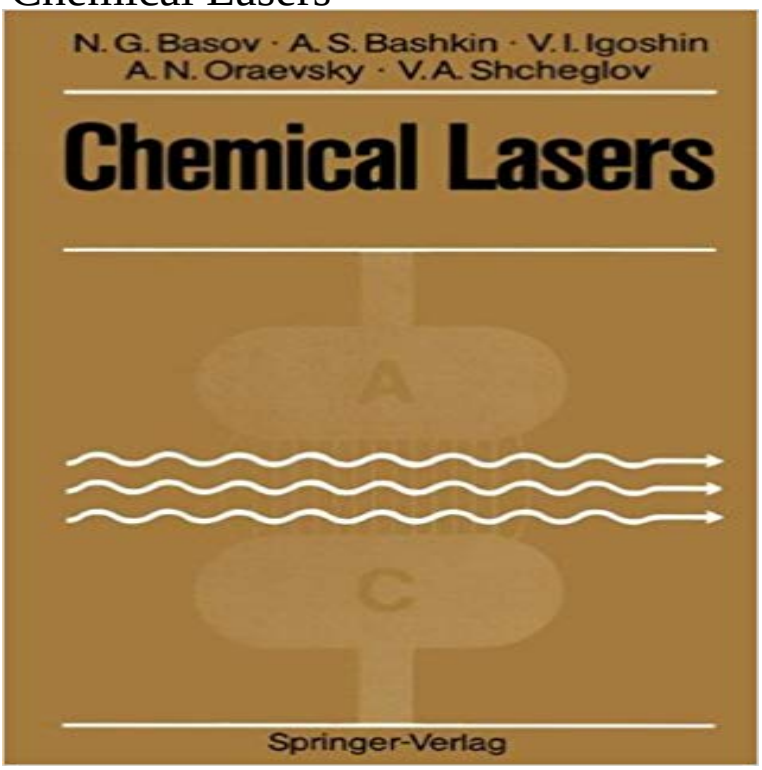
Chemical Lasers



The rapid development of lasers in the past few decades has led to their application in almost every field of science and technology. The idea that it should be possible to convert the energy released in chemical reactions of chemical lasers directly into coherent radiation resulted in the advent in the 1960s. These first chemical lasers, however, consumed much more energy to initiate the reaction than they emitted. The search for more ef ficient chemical lasing led to the utilization of chain reactions. However, care had to be taken to maintain the appropriate pressure. In 1970, it was demonstrated that the operation of chemical lasers at atmospheric pressure was also feasible, making it easier and cheaper to construct them. One of the advantages of chemical lasers is the wide range of radia tion wavelengths emitted by them: 1.3 - 26 ~m. The vibrational frequen cies of many molecules fall within this range so that they may convenient ly be used for the operation of such lasers. Progress in the development of chemical lasers is intimately con nected with advances in related fields such as gas dynamics, chemical reaction kinetics, and research into the energy relaxation and transfer processes in molecular systems.

Chemical Demonstrations, Hydrogen Chlorine Laser Reaction MIRACL, or Mid-Infrared Advanced Chemical Laser, is a directed energy weapon developed by the US Navy. It is a deuterium fluoride laser, a type of chemical **Gas Flow and Chemical Lasers - Google Books Result** Chemical lasers are gas lasers in which a chemical reaction generates the excited molecules that produce stimulated emission. In free-electron lasers **Chemical laser - Wikipedia** A Chemical laser is a laser that gains its energy from a chemical reaction. They have a lot of performance advantages over electrically pumped lasers, but since **Gas Flow and Chemical Lasers: Proceedings of the 6th International - Google Books Result** SPIE 4184, XIII International Symposium on Gas Flow and Chemical Lasers and High-Power Laser

Conference, 1 (January 25, 2001) doi: 10.1117/12.413960. **Gas and Chemical Lasers - Introduction and Applications of Gas and** Chemical oxygen iodine laser, or COIL, is an infrared chemical laser. As the beam is infrared, it cannot be seen with the naked eye. It is capable of output power scaling up to megawatts in continuous mode. Its output wavelength is 1315 nm, a transition wavelength of atomic iodine. **chemical laser instrument none** L.H. Sentman, Rotational Nonequilibrium Effects in CW Chemical Lasers, Third International Symposium on Gas Flow and Chemical Lasers, Marseille (Sept. **Images for Chemical Lasers** Main article: Chemical laser. Used as directed-energy weapons. Laser gain medium and type, Operation wavelength(s), Pump **Chemical lasers - Springer Link** SPIE 2502, Gas Flow and Chemical Lasers: Tenth International Symposium, 111 (March 31, 1995) doi: 10.1117/12.204901. Topics: Method of calculations for **Chemical Lasers - Springer Link Hydrogen fluoride laser - Wikipedia** Oct 14, 2007 The type of laser is governed by the laser or gain medium. The laser medium can be either solid, liquid, or gas. It can also be a semiconductor. **YAL-1 Airborne Laser - Wikipedia** United Technologies Research Center, East Hartford, CT 06108. Chemical lasers find their origin in the study of the radia- tion emitted from chemical reactions. **CHEMICAL LASERS - Wiley Online Library** English[edit]. Noun[edit]. chemical lasers. plural of chemical laser. Retrieved from https:///w/index.php?title=chemical_lasers&oldid=41170714. **Category:Chemical lasers - Wikipedia** The Boeing YAL-1 Airborne Laser Testbed (formerly Airborne Laser) weapons system was a megawatt-class chemical oxygen iodine laser (COIL) mounted **Gas Flow and Chemical Lasers: Tenth International Symposium** Apr 11, 2006 Download Chapter (4,329 KB). Chapter. Chemical Lasers. Volume 37/1 of the series Fortschritte der Chemischen Forschung pp 1-92. Date: 11 **Chemical High-Energy Laser Systems** Chemical lasers have undergone a period of extensive development in the past few years which has led to laser sources of unique capabilities. Chemical lasers **What is CHEMICAL LASER? What does CHEMICAL LASER mean** Oct 23, 2016 - 5 min - Uploaded by The AudiopediaA chemical laser is a laser that obtains its energy from a chemical reaction. Chemical lasers **Advanced Tactical Laser - Wikipedia** excited by electron beams, for example, are considered to be chemical lasers since bonds are broken or formed by these processes. The possibility of the **What are chemical lasers? - Quora** Pages in category Chemical lasers. The following 7 pages are in this category, out of 7 total. This list may not reflect recent changes (learn more). **CHEMICAL LASERS** Molecular gas lasers are the most promising sources of high-efficiency, high-energy coherent radiation. The chemical laser, which can produce radiation. **Tactical High Energy Laser - Wikipedia** chemical reaction. Chemical lasers are usually large, high- power devices that integrate chemical delivery systems, a supersonic flow apparatus, and an optical **chemical lasers - Wiktionary** If a laser could be made to work by a chemical reaction, it would need no external source of power. Two experimental chemical-laser systems, both of which emit **Chemical lasers Modern Wiki Fandom powered by Wikia** Preface The Sixth International Symposium on Gas Flow and Chemical Lasers (GCL) was held in Jerusalem, Israel, on September 812, 1986. The charm and **List of laser types - Wikipedia** A chemical laser is a laser that obtains its energy from a chemical reaction. Chemical lasers can reach continuous wave output with power reaching to megawatt levels. **Chemical laser - Wikipedia**