

Title (en)
SURFACE CATALYST INFRA RED LASER

Title (de)
INFRAROT LASER MIT OBERFLÄCHENKATALYSATOR

Title (fr)
LASER INFRAROUGE A CATALYSEUR DE SURFACE

Publication
EP 1232546 A4 20030102 (EN)

Application
EP 00976599 A 20001019

Priority
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• US 16052799 P 19991020

Abstract (en)
[origin: WO0129938A1] A process and apparatus are provided for the generation of laser radiation by providing a fuel (105), such as methanol, ethanol, carbon monoxide and/or hydrogen, and air (106) to a catalyst (102), such as platinum, which is located beneath a polychromatic resonant optical cavity formed by laser mirrors (107) and (108). The catalyst surface is flooded with adsorbed fuel radicals, leaving relatively few sites for oxygen adsorption. Under this condition, the oxygen dissociates into two oxygen atoms or free radicals with approximately one electron volt of energy (i.e. "hot atoms"). These "hot atoms" of oxygen find fuel radicals as collision partners and form reaction products that are in their highest vibrational state. A vibrationally inverted population is a prerequisite of stimulated emission of radiation.

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IPC 8 full level
H01S 3/09 (2006.01); **H01S 3/0953** (2006.01); **H01S 3/22** (2006.01); **H01S 3/223** (2006.01)

CPC (source: EP KR)
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Citation (search report)
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• See references of WO 0129938A1

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