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**Liu et al.**

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(54) **SEMICONDUCTOR LASER SYSTEM FOR LASER MEDICAL COSMETOLOGY**

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See application file for complete search history.

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(57) **ABSTRACT**

A semiconductor laser system for laser medical cosmetology, comprising a semiconductor laser array (1), an optical waveguide (2), a boss-shaped transparent contact window (3) located at the light outlet end of the optical waveguide (2), and a refrigeration block (4) for conduction cooling of the contact window (3); the refrigeration block (4) consists of a base portion and a hollow head above the base portion; the front part of the hollow head presses against and is tightly fastened to the whole side wall of the contact window (3); the light outlet end of the optical waveguide (2) is located in the cavity of the hollow head, and has a gap between the waveguide and the inner wall of the hollow head; a thermoelectric semiconductor refrigerator (5) is disposed below the base portion of the refrigeration block (4); a first water supply block (6) is disposed below the thermoelectric semiconductor refrigerator (5); and a second water supply block (16) for heat dissipation is installed in the semiconductor laser array (1). The system employs a unique refrigeration structure design so as to cause the temperature

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