

## The Review of Laser Engineering

THE LASER SOCIETY OF JAPAN

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ONLINE ISSN : 1349-6603

PRINT ISSN : 0387-0200

## The Review of Laser Engineering

Vol. 31 (2003) , No. 11 p.721

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## Development of the Laser-Plasma Ion Source for Cancer Therapy

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(Received: June 25, 2003)

**Abstract:** The hadronic cancer therapy is more attractive than the surgery for localized tumor. However, the hadronic radiotherapy seems not to be easily spread out, because it needs huge capital investments as well as running cost, including an accelerator, gantries and a building for such a radiotherapy system. On the other hand, a laser-plasma ion source will potentially bring us much smaller accelerator system for the hadronic radiotherapy. The laser-plasma ion source is currently developed as an injector for a conventional accelerator or as an advanced accelerator for direct cancer therapy. In this report, we describe present status of radiotherapy system and researches on laser plasma ion sources for radiotherapy.

**Key Words:** [Hadronic cancer therapy](#), [Proton/heavy-ion beam](#), [High power laser](#), [Laser plasma](#)

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To cite this article:

Koji MATSUKADO, Sergei V. BULANOV and Hiroyuki DAIDO: The Review of Laser Engineering, Vol. **31**, (2003) p.721 .

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doi:10.2184/l sj.31.721

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