

PhD position for development of high-power diode laser sources for medical and industrial applications

The Optics and Plasma Research Department at Risø National Laboratory, Technical University of Denmark, has an opening for a PhD position in the field of high-power diode lasers.

The work at Risø National Laboratory encompasses external cavity diode laser systems for medical and industrial applications. These fields are key research areas in the diode laser group at the Optics and Plasma Research Department at Risø. By coordinating and participating in several international and national research projects we have built up extensive experimental and theoretical competence within diode laser sources with improved performance for applications in the graphics industry as well as in medical diagnostics and therapy.

Job description

High-power diode laser systems with improved performance regarding spatial and spectral beam quality have high potential within medical applications such as interstitial photodynamic therapy (PDT) used for treatment of malignant lesions in the body. The purpose of the project is to develop and investigate such novel high-power, high-brightness diode laser sources and to test these sources for PDT and other relevant applications. The laser system development will focus on new approaches on external feedback cavities for improving the spatial and spectral beam quality of red and near-infrared broad area laser diodes and laser bars. The development will include investigation of novel laser architectures for lasers using phase-conjugate crystals in the external cavity. The red laser systems will be tested for interstitial PDT applications in collaboration with Lund University Medical Laser Centre.

The project is supported by the BIOP graduate school www.biop.dk/graduateschool/ and the Proof of Concept fund under the Danish Agency for Science, Technology and Innovation (FIST).

Qualifications

We seek a candidate with the following qualifications:

- Masters degree within optics/photonics, physics or engineering
- Ability to work independently and to be a part of a research group
- Good communication skills in English – written and spoken

Moreover, interest in applied science and experience with laboratory work is an advantage.

We offer

We offer an exciting and challenging job in a research group with international collaboration projects, well-equipped optics and laser laboratory facilities and good possibilities for professional and personal growth.

Terms of employment

The place of employment will be the Optics and Plasma Research Department. The terms of employment will be in accordance with those of scientific staff at Danish universities. The PhD grant has a fixed duration of 3 years. Project start will be as soon as possible.

Application

If you are interested in the position, you should send your application, marked “71-07” to:

Optics and Plasma Research Department
Risø National Laboratory
Technical University of Denmark
P.O. Box 49
DK-4000 Roskilde
Denmark
Att: Bitten Skaarup

You are also welcome to send your application by e-mail to: bitten.skaarup@risoe.dk.

The deadline for the application is 13 April 2007.

Further information

For further information please contact Senior Scientist Birgitte Thestrup, birgitte.thestrup@risoe.dk, +45 4677 4548, or Scientist Ole Bjarlin Jensen, ole.bjarlin.jensen@risoe.dk, +45 4677 4553.

You may read more about Risø and the Optics and Plasma Research Department at www.risoe.dk and opl.risoe.dk.

Risø requires diversity and supports equal opportunities irrespective of sex and ethnic background.

As of 1 January 2007, Risø National Laboratory has become part of the Technical University of Denmark (DTU). The new DTU is a broadly founded, business-oriented technical elite university where research goes hand in hand with education, innovation and advisory functions for government authorities. Read more on www.detnydtu.dk/.