



## COOPERATION OFFER

### GENERAL DESCRIPTION

**Title** (max. 256 char.) **Innovative high energy, short pulsed laser sources based on thin disc technology**

**Summary** (max. 500 characters)

A German SME located in Stuttgart, Germany, offers thin disc laser technology from components to complete laser sources.

The SME is open for collaborations where laser sources are needed with specifications not fitting to market available systems. Especially, if higher pulse energy or higher average power is necessary.

**Description** (min. 100 characters, max 4000 char.)

The German SME located in Stuttgart offers thin disc laser technology from components to complete laser sources. The thin disc technology enables high pulse energy at short pulses and high repetition rates. The company assists customers with components and know how to develop their own laser systems or we develop and deliver outstanding lasers for our international distributed customers. Further the company assists customers to develop laser processes fitting to their individual applications.

*- The new technology addresses the following problem:*

The market for high power lasers is increasing rapidly. Especially the applications for lasers with ultrashort pulses in the time regime of femtoseconds and picoseconds are growing. These lasers are still very expensive but the complex design doesn't allow reducing the costs significantly. Hence, one solution to enhance the effectivity of such processes can be an increase of the average power to reduce the cost per Watt. In science there is an increasing demand for special designed high energy lasers for new measurement experiments or even new medical applications.

*- Main features and innovative aspects of the technology*

The thin disc technology allows an optimised thermal management compared to classic rod design, which results in higher average power. Compared to fibre lasers the mode diameter is much larger, so high peak intensities can be handled better. This enables outstanding parameters in the near infrared. By conversion technologies the regime can be enlarged to shorter or even larger wavelength.

*-potential application/market*

Material processing, scientific measurements, medical applications

*-desired co-operation type*

Commercial Agreement: The company offers high energy laser systems and processing know how to interested partners in industry and research institutes. Within close discussion the company is able to react to customer specific topics.

Technical and research agreement: The company is open to enlarge its product portfolio. Therefore, the company is interested in collaboration models regarding the topics HHG and OPCPA.

**Advantages and Innovations** (min.50 characters, max. 2000 char.)

For the field of material processing we have already built up laser systems with up to 120 W @ 1030 nm @ 600 µJ @ 180 fs.



For scientific applications the company has already built up systems with 180 W @ 1030 nm @ 180 mJ @ 3 ps. Both lines are far beyond most competitors and there is a large potential to convert these high energies into other wavelength.

#### Current Stage of Development\*

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Under development /laboratory tested | <input type="checkbox"/> Field tested / evaluated              |
| <input type="checkbox"/> Available for demonstration                     | <input type="checkbox"/> Prototype available for demonstration |
| <input checked="" type="checkbox"/> Already on the market                | <input type="checkbox"/> Concept stage                         |

#### Comments Regarding Stage of Development:

The laser systems mentioned within the upper topic are available, higher average power and changes of the wave length is in development stage. \_\_\_\_\_

#### Intellectual Property Rights Status\*:

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Patent(s) applied for but not yet granted | <input type="checkbox"/> Secret know-how                                 |
| <input checked="" type="checkbox"/> Granted patents                           | <input type="checkbox"/> Exclusive rights                                |
| <input type="checkbox"/> Copyright  | <input type="checkbox"/> Trade Marks                                     |
| <input type="checkbox"/> Design rights  | <input type="checkbox"/> Others (registered design, plant variety, etc.) |

#### Comments Regarding IPR Status: (e.g. countries for which protection has been granted or applied for)

Patents granted as well as applied for in Germany and the European Union

**Preferred Countries for Dissemination:** Countries of the European Union

### DETAILS OF YOUR OWN ORGANISATION/COMPANY

**Type\***  Industry  R&D Institution  University  Private Inventor

Other: please specify

#### Comments:

**Organisation/Company Size\*** (please tick one box)  < 10 employees  11-50 employees

51-250 employees  251-500 employees  > 500 employees

**Year Established:** 2007

**Turnover (only for business profiles):**  < 1 mio  1 – 10 mio

10 – 20 mio  20 – 50 mio  50 - 100 mio

**Already Engaged in Trans-National Cooperation**  Yes  No

#### Experience Comments:

#### Certification Standards:

**Languages Spoken:** English, German

### COLLABORATION DETAILS

#### Type of partnership considered:

#### Technology Offers



- Commercial Agreement with technical assistance (an agreement arranging the acquisition of a product/technology paired with the provision of a number of services in support of a transfer of technology)
- Joint Venture Agreement
- License Agreement
- Technical co-operation agreement
- Research co-operation agreement

### **Business Offers**

- Distribution services agreement
- Acquisition agreement
- Franchise agency agreement
- Manufacturing agreement
- Outsourcing agreement
- Subcontracting
- Financial agreement
- Services Agreement

### **Type and Role of Partner Sought\*:**

- *Type of partner sought (such as industry, academy, research organisation):*

We are open for partners of different fields: Laser processing, science and partners for HHG and OPCPA

- *Specific area of activity of the partner (example: manufacturer/distributor/user/disposal of plastic packages etc.)*

- *Tasks to be performed by the partner sought: What expertise/ tasks do you expect from the partner?*

Partners of laser processing should have specific applications in mind, the company wants to assist with processing know how and its laser technology.

Partners of science should have specific experiments in mind, where stable and high energy lasers can help to achieve better measurement results.

Partners of HHG and OPCPA should have existing experience in working with high energy and ultrashort laser pulses.

### **Size and Type of Partner Sought (e.g. industry, research):**

For the scientific experiments mainly research institutes are possible.

For laser processing and the development activities about frequency conversion industrial partners are necessary. Due to our size as SME the partner also could be SME, but the company has already established business activities with large companies, so this even would be possible.

### **Additional information (pictures)**



## CONTACT

Please contact the RespiceSME coordinator Samantha Michaux for the contact data of the company.

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