

Grant agreement no: 317803

**MId- to NEaR infrared spectroscopy for imProVed medical  
diAgnostics**

**MINERVA**

**Deliverable D10.2  
Public website online**

Technical Coordinator: Jon Ward  
Company: Gooch and Housego (UK) Ltd.  
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**Leader in charge of deliverable: Bruce Napier  
Vivid Components**

<i>Project co-funded by the European Commission within the Seventh Framework Programme</i>		
<i>Dissemination level</i>		
<i>PU</i>	<i>Public</i>	<i>X</i>
<i>PP</i>	<i>Restricted to other programme participants (including the Commission Services)</i>	
<i>RE</i>	<i>Restricted to a group specified by the consortium (including the Commission Services)</i>	
<i>CO</i>	<i>Confidential, only for members of the consortium (including the Commission Services)</i>	

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### **Change register**

Version	Date	Author	Organisation	Changes
A	25-Jan-2013	Bruce Napier	Vivid Components	Initial

## **2. Statement of independence**

The work described in this document is genuinely a result of efforts pertaining to the MINERVA project: any external source is properly referenced.

Confirmation by Author: Bruce Napier; Vivid Components.

## **3. Executive summary**

The MINERVA website was put online on 21-Jan-2013 at [www.minerva-project.eu](http://www.minerva-project.eu)

The website includes pages on the consortium, background to the project, contact info and public documents.

[A password-protected members' area is available in a separate site at: <http://members.minerva-project.eu>]

The sites were constructed by Jason Buckley and Bruce Napier, both of Vivid Components.

## 4. MINERVA public website

The public website includes the following pages:

• Homepage	Overview of the project objectives and background
• Technology	Summary of the technical objectives and context
• Consortium	Listing the project partners
• Documents	Library of all public outputs from the project
• News	Detailing news items on the project (with RSS feed)
• Events	List of relevant MINERVA events, detailing partner participation
• Contact	Contact info.

These pages will be maintained throughout the course of the project. A few screenshots are shown to illustrate the style and format of the site.

### 4.1. Homepage



In recent years it has become clear that a technology known as mid-IR imaging spectroscopy has the potential to open a new chapter in bio-medical imaging. There is good evidence that it could be an effective tool for early cancer diagnosis and improved survival rates. The mid-IR covers the bio-molecule "fingerprint region" and can be used to identify tiny quantities of chemicals associated with important diseases.

Image of prostate tissue using mid-IR. [Courtesy of University of Exeter.]

Early work based on a direct search for "cancer marker" absorption peaks has proved of limited value. However, great progress has been made in recent years by analysing the entire bio-molecular mid-IR spectral signature using automated algorithms. Mathematical techniques, especially multi-variate analysis, map the distribution of different related molecular species. Computer programs then search for and identify known patterns that have been shown to be linked with cancer, allowing improved early diagnosis.

To date, the lack of suitable sources, detectors and components in the mid-IR has restricted the technology to one of academic interest, based on weak thermal sources, low power lasers or synchrotron research tools.

The MINERVA project will take advantage of several new breakthroughs in photonic technology to develop a new mid-IR technology platform and processes for early detection of cancer.

**Minerva**

PAGES

- Consortium
- Contact & Info
- Documents
- Events
- Home
- News

THE LATEST

MORE

Thanks for visiting the MINERVA website. For more information, please contact Dr Bruce Napier at bruce@vividcomponents.co.uk.

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## 4.2. Technology

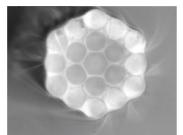
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improved medical diagnostics

HOME TECHNOLOGY CONSORTIUM DOCUMENTS NEWS EVENTS CONTACT & INFO  

**MINERVA mid-IR photonic technology**



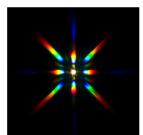
- Low loss robust chalcogenide fibres for fibre lasers, supercontinuum generation and delivery
- Fibre end caps and splicing technology for soft glass fibres



- Mid-IR glass fused fibre components
- Mid-IR AO modulators based on calomel
- 2.9 μm Er:ZBLAN and 4.5 μm Pr-doped chalcogenide fibre laser pumps



- Low cost T2SL MWIR and LWIR FPA detectors
- Performance matching state-of-the-art MSL devices



- Simulation, design and fabrication of a range of mid-IR SCG sources
- Novel sources based on ZBLAN and InF<sub>3</sub> fibre as well as MINERVA pump lasers and fibres.

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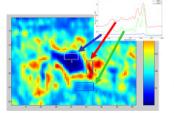
Your email:

**FRAMEWORK 7**

 MINERVA is supported by the European Commission under the Seventh Framework Programme (FP7)

**MINERVA applications**

**High volume pathology screening**  
(i.e. automated microscope-based examination of samples)



**In vivo, remote, real-time skin surface examination**  
(i.e. non-invasive investigation of suspected skin cancer).



This project will open the mid-IR to further exploitation, and the technology developed will be transferable to a huge range of applications both in bio-photonics and in wider industry.

**Minerva** **PAGES** **THE LATEST** **MORE** © 2012 Vivid Components Ltd

[Consortium](#) [Contact & Info](#) [Documents](#) [Events](#) [Home](#) [News](#) [Technology](#)

Thanks for visiting the MINERVA website. For more information, please contact Dr Bruce Napier at [bruce@vividcomponents.co.uk](mailto:bruce@vividcomponents.co.uk).

### 4.3. Contact & info

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For further information, please contact:

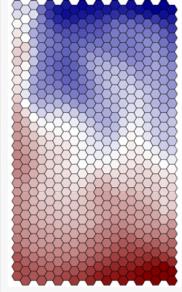
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Project funding 7.3 M€

Start date 01-Nov-2012  
End date 31-Oct-2016  
Duration 48 months.

  
Image courtesy of Gloucestershire Hospitals NHS Foundation Trust

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FRAMEWORK 7 

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## 5. MINERVA private pages

The password-protected MINERVA website (<http://members.minerva-project.eu>) provides a complete document register for the project, and includes the following pages:

- Homepage Intro, news and contact lists
- Actions register Listing all open and closed actions from all meetings & calls
- Meetings Minutes and files from all meetings
- News Internal news items on the project (RSS feed to consortium only)
- WP progress Gantt charts, WP reports and technical documents, deliverables & milestones (page per WP)
- Document register List of all project documents (page per partner).

These pages will be maintained throughout the course of the project. A screenshot is shown to illustrate the style and format of the site.

