

## **Gold nanorods for improved border detection of cancerous tissues (BIRAD)**

[Dror Fixler](#), Bar-Ilan University, Engineering

### **The Problem**

Most optical-physiological diagnoses are based on the insertion of light, with known parameters, to a tested tissue, followed by the measurement of the reflected, transmitted or absorbed light. Changes in the optical properties of this light such as its spectrum, polarization and intensity, compared to the injected light, result from interactions of the irradiated light with the tissue's components.

### **The Solution**

THIS new method for cancer detection IS based on Diffusion Reflectance (DR) measurements of gold nanorods (GNR).

IT IS Noninvasive detection of oral cancer (including mouth, tongue, ear, nose, throat and vocal chords cancers).

Other potential medical applications include superficial tumors, such as breast cancer and melanoma.

With high sensitivity (90%), selectivity and specificity (97%), this new technology enables the simple and fast tumor detection with no intrusive surgery and up to 6 mm deep in the tissue.

### **The Commercial Benefit**

With high sensitivity (90%), selectivity and specificity (97%), this new technology enables the simple and fast tumor detection with no intrusive surgery and up to 6 mm deep in the tissue.

### **Market Potential**

Global Cancer Diagnostics Market Poised to Surge from USD 80.67 Billion in 2014 to USD 128.6 Billion by 2020.

Market Growth - CAGR of 7.6% in 2015-2020, North America was the dominating region in the global market of cancer diagnostics and accounted for over 40.7% share of the total market in 2014. It also expected to continue this development by the end of 2020 due to the rising advancement in technology associated with the methods and treatments of cancer. North America is followed by Europe. The Asia Pacific cancer diagnostics market is driven by the increasing prevalence of breast cancer in this region.

### **Target Markets/Industries**

CANCER DIAGNOSTIC TOOLS

### **Team: Primary Inventor**

PROF. Dror Fixler is a member of the Nano Photonics Center at the Institute of Nanotechnology and Advanced Materials (BINA), and a Lecturer at the Faculty of Engineering.

His primary foci are developing new technologies for super resolution microscopy, medical testing, and communications networks.

He is also a visiting professor in Technical Institute of Physics and Chemistry, China.

In 2015, Fixler received European Science Foundation's Plasmon-Bionanosense Award.

In 2017, Fixler received the President's International Fellowship Initiative Award of the Chinese Academy of Sciences (CAS).

PROF. Dror Fixler INVENTED MORE THAN 12 PATENTS.

### **The Opportunity**

DIAGNOSTIC COMPANIES ARE INVITED TO LICENSE OUR PATENT THROUGH LICENSING AGREEMENT WITH SPONSORED RESEARCH.

### **Contact for more information:**

Nati Fisher , VP Business Development, +972-52-2673435

---



Bar-Ilan University , Bldg 102, Ramat-Gan Israel 5920002  
Phone: 972-77-3643522 , Fax: 972-77-3643545