Abstract
This technology offers a novel laparoscopic light source for the use of minimal invasive surgeries. This miniature light gadget is designed to work with “transillumination principle” enabling more effective illumination during the operation. Thus it is providing a safer way of operating tissues and organs and also better diagnosis. Furthermore, this specially engineered technology provides an operation with no-thermal energy transmittance to the tissues and organs.

Technical Overview
Transillumination technique is commonly used in order to determine the damaged parts in the tissue and organs. Transillumination technique is being widely used in open surgeries; during the surgery tissues and organs are examined by bringing them in front of a light source. Although this technique is an effective way of diagnosing damaged or cancer tissues, transillumination technique has not been used in laparoscopic surgeries up until now.

This novel light source gives the opportunity to the operators to use this technique in minimal invasive surgeries – laparoscopic surgeries. Since the open surgeries elongates the recovery process for the patients, performing laparoscopic surgeries instead of open surgeries are always more preferable. This miniature light gadget developed herein this invention offers a safer way of diagnosing and operating tissues and organs with more accurate results to the operators.
**Technology Features & Specifications**

“Transillumination technique” is an accurate way of seeing tissues and organs for better diagnosis. Transillumination technique which is basically illumination of the subject via giving light from the back is only being used in open surgeries today.

With this newly developed light gadget it would also be possible to use transillumination technique for laparoscopic surgeries. This miniature laparoscopic light source will be transferred into the abdominal cavity from the incisions present on the abdominal wall through the trocars and will be placed behind the organ or the tissue to be operated. Therefore the light would be used during the whole operation. The light source is designed in a way that no thermal energy would be given to the tissue and organs during the operation.

**Potential Applications**

Technology is applicable in Healthcare Industry for laparoscopic surgeries.

**Customer Benefits**

- More effective illumination for laparoscopic surgeries.
- Possibility to illuminate the organs during the whole operation in the closed surgeries by the unique design
- No thermal energy would be given to the tissues unlike the traditional ways
- Easy to use for the operators (disposable)

**Market Trends and Opportunities**

According to a recent report by Global Industry Analysts, the global market for laparoscopic devices is projected to reach US $9.5 billion by 2020, driven by the growing volume of minimally invasive procedures and technological innovations surrounding laparoscopy devices. Laparoscopy evolved to become a standard procedure in general surgery. Given its intrinsic advantages such as limited post-operative trauma, less scars, quick recovery and cost efficiencies in treatment, laparoscopy is increasingly being adopted.

**Additional Technical Information**


*Assignee*: Koç University

*Keywords*: Minimally Invasive, Laparoscopic, transillumination

KOÇ ÜNİVERSİTESİ
Rumelifeneri Yolu Sarıyer 34450
İstanbul, Türkiye
T: +90 212 338 12 77
tto@ku.edu.tr  tto.ku.edu.tr

INVENTRAM
Nakkaştepe Azizbey Sok.No.1 Kuzguncuk
34674 İstanbul, Türkiye
P: +90 216 531 05 64  T: +90 216 343 15 57
inventram.com