

MULTIFUNCTIONAL
LASER SYSTEMS
FOR PROFESSIONAL
APPLICATION IN AESTHETIC
MEDICINE AND COSMETOLOGY



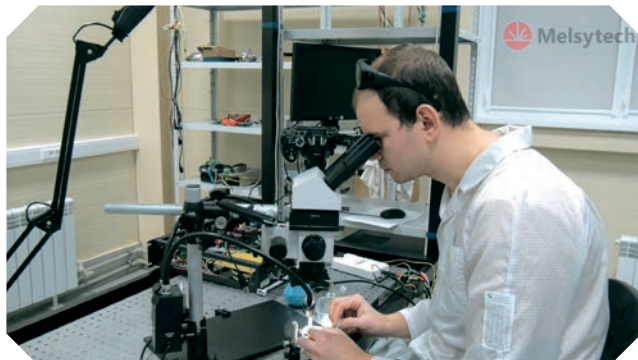
MELSYTECH Ltd.

MELSYTECH Ltd. (Nizhny Novgorod Region, Russia) is an international developer, manufacturer and supplier of medical laser systems. MELSYTECH Ltd. offers all well-known laser types - Nd:Yag, diode, KTP, Erbium, Holmium, Thulium, Q-switched and picosecond lasers - for such applications as cosmetology, dermatology, gynecology, phlebology, ENT, aesthetic medicine and more. The company is the first and only supplier of medical laser systems, whose whole product range is based on diode pumping technology. The enterprise has in-house production of laser and optical components, modules, and accessories that provide for full cycle manufacturing of laser systems.



MELSYTECH Ltd. today:

- A leading company on the Russian and CIS market for innovations and production research in laser technologies for medical application.
- A large network of distribution in Russia and partnerships overseas.
- A holder of patents for unique proprietary technologies.
- A team of qualified specialists, including medical advisers, and engineers doctorate and highest academic degree.
- Clinical trials of technologies and new equipment in close cooperation with leading dermatologists and plastic surgeons.
- Quality, reliability, efficiency of laser systems.
- Full production cycle - design and development, manufacturing of components, assembly.



2010 – year of establishment of the company as a medical laser manufacturer

70 – over 70 laser devices in sales per year

9 – nine different laser wavelengths

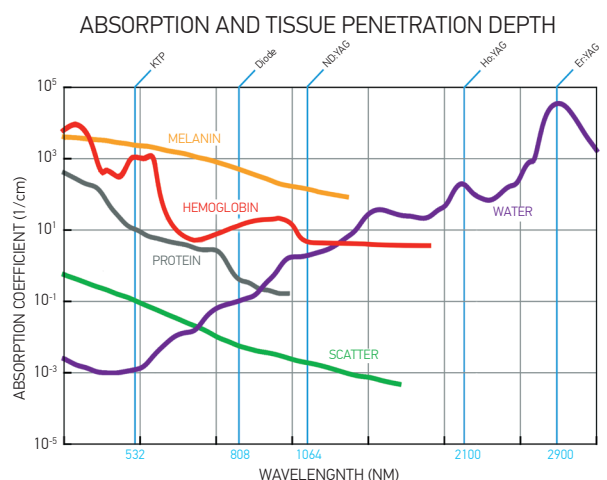
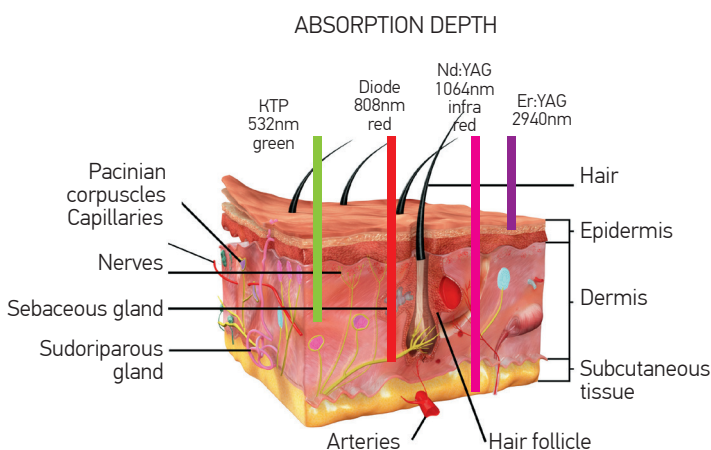
1 – number one in medical laser sales in Russia

LASER TECHNOLOGY

On a daily basis doctors all over the world undertake thousands of laser treatments to efficiently deal with medical, cosmetology, and aesthetic challenges. Since 1960, when the laser phenomenon was discovered, the technology has constantly advanced to transform it into routine and safe application. The efficiency and high technology nature of lasers drive their presence in our life on a bigger and bigger scale. In particular, aesthetic medicine, dermatology and cosmetology have become those areas which cannot be imagined without laser technologies anymore.



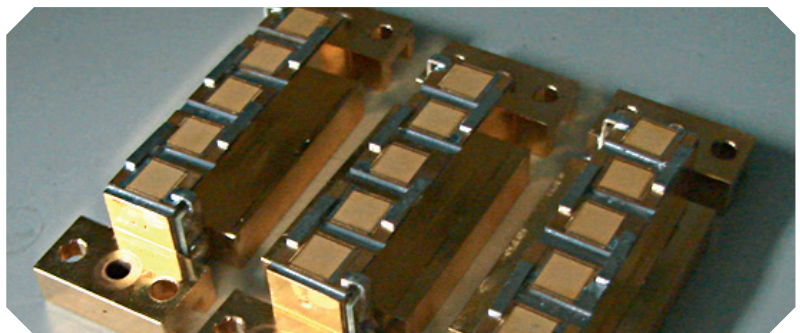
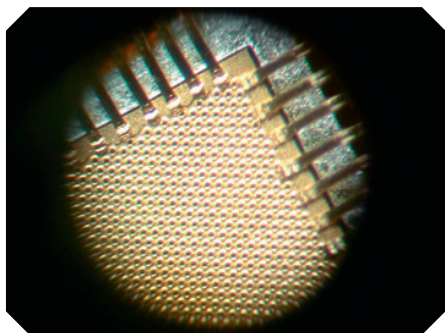
Laser emission features a number of specific characteristics that define how and at what depth alive tissue is affected. Depending on a wavelength the laser targets various components within human skin, that can either reflect or absorb laser emission, such as water, hemoglobin, melanin, oxyhemoglobin. The latter ones, according to a known theory of selective photothermolysis, are chromophores, that is components that selectively absorb laser energy. For example, one of the most popular aesthetic treatments today is laser hair removal which is carried out with the help of 808nm wavelength laser emission. This wavelength, as shown in the picture below, is well absorbed by the melanin - a pigment in hair that determines the density of color. This wavelength also penetrates into the skin deep enough to target hair bulbs. As a result the hair follicles degenerate and the hair ceases growing. You can check how well each chromophore can absorb laser emission depending on a wavelength on a graph below.



DIODE-PUMPING TECHNOLOGY

Melsytech is among the first companies in the world whose complete range of laser systems and medical laser devices is based on diode-pumping technology. Laser systems by Melsytech do not employ any flash lamps, and thus do not have any flash-lamp related problems and shortages, but bring about new standards of energy efficiency, laser emission control and serviceability in the aesthetic laser application.

Flash lamps as laser source are completely replaced by diode bars, or laser chips. The diode bars, unlike flash-lamp technology, originally emit a desired wavelength. The diode modules feature a small blueprint, high efficiency, optimum operation temperature range, many years of lifetime, and a high pulse repetition rate.



Parameters	Flash-lamp pumping	Diode pumping
Technology	Conventional	Advanced
Operation	Complicated adjustment, often by a service engineer	Out-of-box experience
Laser source life time	Flash lamp, up to a year	Diode, no less than five years
Optical power and energy	High	High
Laser delivery	Articulated arm	Articulated arm/optical fiber
Size and weight	Bulky, heavy	Smaller blueprint and weight
Maintenance	Third-party, high costs	User, low costs
Pulse repetition rate	1-15Hz	1-100Hz
Emission efficiency	<5%	>50%
Power consumption	High	Low
Cost of ownership	High	Low

Application																			
Laser device	Wavelength	Laser type	Available handpieces and tools	Skin rejuvenation	Carbon peeling	Pigmentation, HPI, melasma	Hair removal	Spider vein removal	Vascular lesion removal	EVLA (phlebology)	Acne treatment	Postacne and scars	Tattoo removal	ENT	Gynecology, vaginal rejuvenation	Lipolysis	Permanent make-up	Wine stains	Nail fungus treatment
Magic Max	532nm	Quasi-continuous	Laser delivery - optical fiber. Single spot handpieces 1.2, 2, and 6mm; zoom handpiece; scanner, ENT adaptor; gynecological handpiece; EVLA adaptor; lipolysis handpiece.																
	808nm																		
	1064nm																		
Magic Super	532nm	Q-switch, double pulse	Laser delivery - articulated arm. Zoom handpiece; scanner.																
Magic Super Full	1064nm	Q-switch, double pulse																	
	1064nm	Long pulse																	
Magic FR	1064nm	Long pulse	Laser delivery - optical fiber. Zoom handpiece 1-6mm, or 3-15mm.																
Magic FR Full																			
Magic One Lite	808nm	Sapphire window with contact cooling	Hair removal handpiece, 1 kW, 10x10mm spot																
Magic One Plus			Hair removal handpiece, 4 kW, 15x25mm spot																
			Hair removal handpiece, 4 kW, 10x25mm spot																
Magic Max Plus	Combiner Magic Max + Magic One																		
Magic Super Plus	Combiner Magic Super + Magic One																		

«Best choice» () , «Acceptable» ()

Magic ONE Lite/ Plus

808nm, 1 kW / 4 kW

Features:

New generation diode technology - VCSEL. VCSEL technology offers extended life time, and highly stable operating temperature. New technology allows for quicker, safer and more comfortable hair removal treatment.

Advantages:

- ☀ 15,000,000 shots or 1.5 year warranty
- ☀ High repetition rate up to 15Hz
- ☀ Choice of power 1kW or 4kW
- ☀ Integrated skin contact cooling system with sapphire window, cooling down to -2°C
- ☀ User friendly operation software
- ☀ An easy-to-use, light-weight and right-size handpiece

Get Magic ONE and generate your profit.



TREATMENT
Skin comfort in deed and not in name
True efficiency
Payback in no time

TECHNOLOGY
Latest generation of laser diodes
Constant integrated skin cooling
No consumables
Extended range of skin types
In-motion treatment



Technical specification	MAGIC ONE LITE	MAGIC ONE PLUS	
Spot size, mm	10x10	15x25	10x25
Max energy density	50J/cm ²	35J/cm ²	50J/cm ²
Max pulse length	50ms	30ms	30ms
Power, W	1,000	4,000	4,000
Max pulse repetition rate, Hz	15	15	15
Warranty	15,000,000 shots		

Upon request the system can have an option of connecting either a 1kW handpiece or a 4kW handpiece.

Magic ONE Lite/ Plus

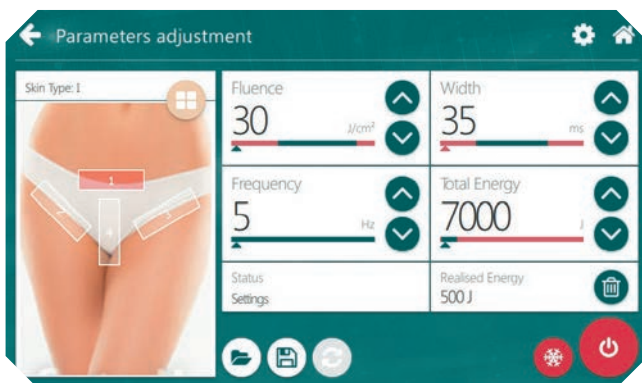
808nm, 1 kW / 4 kW

There are currently several ways to remove unwanted hair, which are determined depending on color of hair, and type of skin. Laser hair removal is an established procedure to remove unwanted hair permanently.

Skin type, color and rigidity of hair are the factors that determine a specific method to apply and allows to forecast a response to the therapy. Dark hair and fair skin are regarded as ideal for laser hair removal procedure.

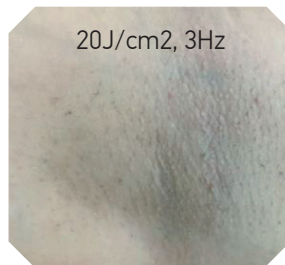
Traditional laser hair removal treatment, known to many patients, is carried out with a diode laser with the 808nm wavelength.

Magic One features a working spot of 10x25mm (or 10x10mm depending on the setup), and new visualization software which allows to select gender, treatment area and skin type to automatically determine required laser parameters.



BEFORE and AFTER

Armpits



20J/cm², 3Hz

In 4 weeks after a single treatment

Armpits



20J/cm², 3Hz

In 4 weeks after a single treatment

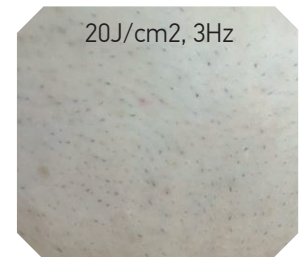
Bikini area



20J/cm², 3Hz

In 4 weeks after a single treatment

Bikini area



20J/cm², 3Hz

In 4 weeks after a single treatment

Magic Super

Magic Super is a multi-functional laser system with unique features, that no traditional flash-lamp pumping technology can offer. Magic Super has a mode of free running generation with long pulses from 300mks to 40ms, and a Q-switch mode with 7ns pulses. No flash-lamp laser device have a similar mode combination. This device will save you investment, as you buy one device with functionalities of two.

Features:

- Two types of laser - long-pulse and Q-Switch operation modes;
- Customizable power level of devices to meet various needs of end users;
- Unique laser operation modes through adjustment of pulse and pulse-to-pulse lengths;
- Pulse repetition rate up to 100Hz;
- Extension of functionality by addition of a dedicated 808nm hair removal handpiece with contact skin cooling.

Application:

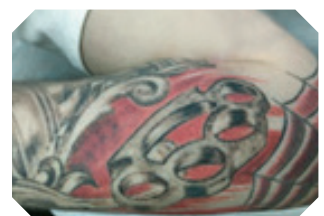
- Tattoo removal;
- Permanent make-up removal;
- Removal of benign pigmented dermal and epidermal lesions, melasma;
- Hyperpigmentation treatment;
- Nonablative skin rejuvenation;
- Wrinkle, scar and postacne treatment.



BEFORE and AFTER



After two treatments



After a single treatment

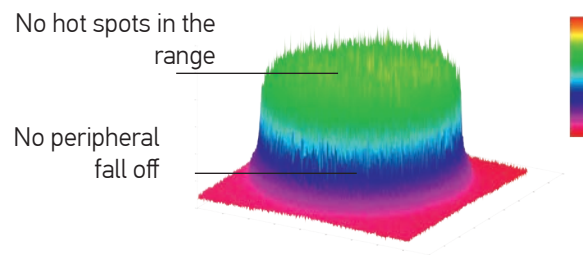
Magic Super

Advantages:

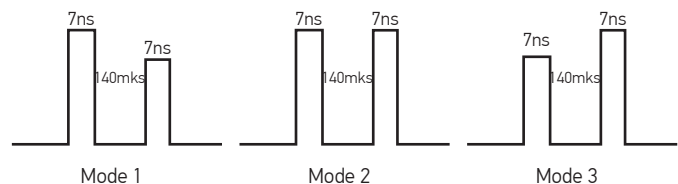
A pulse in a long-pulsed mode can be controllably divided into 1, 2 or 3 sub-pulses. Each sub-pulse can be then set to a chosen energy level. The number of sub-pulses only depends on the length of the long pulse itself and lengths of the sub-pulses. The width of a long pulse can be adjusted within the range of 300mks through 40ms. Such customization turns a simple laser beam into a controlled, precise and finely adjusted tool to effectively treat targeted lesions but avoid damaging neighboring tissue.



FLAT-TOP BEAM PROFILE



Through our proprietary developments and latest research about laser effect on biological tissue at Melsytech we generate the laser beam so that to keep energy distribution uniform all through the profile and avoid hot spots or fall-offs in the working spot.



The Q-switched mode features a double-pulse routine, which is generation of two pulses each 7ns long with preset energy levels and 140mks between them. There are three patterns you can choose from when applying the double pulse mode as shown above. This way we secure a cascade effect which is a combination of mechanical and thermal actions, so that only chromophores are targeted, and no neighboring tissue is damaged.

Wave length, nm	1064		532	
Operation mode	Free running	Q-switched	Q-switched	Long-pulsed Q-switched
Pulse energy, J	10	0.6	0.3	2
Double pulse energy, J		1.4	0.6	
Max pulse length	0.3 – 40ms	5 - 10ns	5 - 10ns	0.3 – 40ms
Max pulse repetition rate, Hz	100	100	100	100
Max energy density, J/cm ²	1270	76	38	255
Cooling system	Air-liquid, integrated			
Spot size, mm	1 - 10mm			
Scanner	Scanning area Ø30mm			



MEDICAL LASER SYSTEMS
AND TECHNOLOGIES



Magic Super Full

The Magic Super Full is an extension of pulsed laser systems range. The configuration Full offers additional power keeping all the necessary functionality in place. Advanced pulse energy settings allow for shorter treatment times, and coping with more pronounced malformations.



Wave length, nm	1064		532	
Operation mode	Free running	Q-switched	Q-switched	Long-pulsed Q-switched
Pulse energy, J	20	1.1	0.5	4.5
Double pulse energy, J		2.2	1.0	
Energy density, J/cm ²	2,500	140	63	573
Pulse length	0.3 – 40ms	5 - 10ns	5 - 10ns	0.3 – 40ms
Max pulse repetition rate, Hz	100	100	100	100
Cooling system	Air-liquid, integrated			
Spot size, mm	1 - 10mm			
Scanner	Scanning area Ø30mm			



Magic Max

A three-wave medical laser for gynecology and aesthetic medicine.

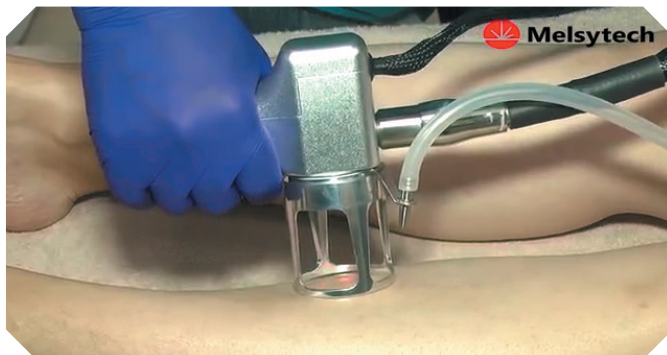
532	nm	808	nm	1064	nm
Nd: YAG+KTP		Diode		Nd: YAG	

The MAGIC MAX provides for application of various modes within a single procedure by switching between the wavelengths in seconds, which makes it universal for a wide range of medical applications. The diode-pumping technology eliminates any flash lamps in the laser systems, and therefore is not subject to cumbersome and expensive aftersales service.



Application:

- Surgery: EVLA, laser lipolysis, ENT.
- Gynecology: Vaginal rejuvenation, laser coagulation of cervical erosion, polypectomy, stress and postpartum urinary incontinence treatment.
- Cosmetology: Laser rejuvenation; various vascular lesions treatment (telangiectasia, Rosacea, hemangiomas, wine stains); acne treatment; hiperpigmentation; benign cutaneous lesions; nail fungus; hair removal.
- One for all. Three different wavelengths in one optical output. The model can also be combined with a dedicated hair removal handpiece with contact skin cooling similar to Magic One.



Wave length, nm	1064		808	532
Operation mode	Free running	Q-switched	Free running	Q-switched
Pulse energy, mJ	3,000	1,500	9,000	1,500
Max pulse length	10ms - 2s	30ns	10ms - 2s	30ns
Energy density, J/cm ²	270	140	800	140
Max pulse repetition rate, Hz	50	50	50	50
Max average output, W	30	30	90	10
Pulse power, W	33,000	33,000	90	15,000
Cooling system	Air-liquid, integrated			
Spot size, mm	1.2 - 10mm			
Scanner	Scanning area Ø30mm			

BEFORE and AFTER



Hemangioma



Immediately after



In 4 weeks



Facial vascular lesions



Immediately after



Wine stain



Immediately after



Leg vascular lesions



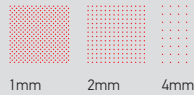
Immediately after

HANDPIECES AND ADAPTORS

Scanner 532, 808,
1064 nm



Enhances performance and ease of application. User can adjust the shape, size and density of scanning. Maximum scanning area makes up 30mm in diameter.



Adjustable
scanning pitch



Adjustable
shape and size of scanning area

MAGIC MAX,
MAGIC SUPER

Zoom handpiece
1.2-10mm.



Shot-by-shot treatment, convenient switching of spot size without changing handpieces; effective for treatment of vascular lesions, wine stains.

MAGIC SUPER

Gynecological
handpiece



This tip locks up onto a standard scanner and is designed for gynecology treatments such as vaginal rejuvenation, laser coagulation of cervical erosion, polypectomy, stress and postpartum urinary incontinence treatment.

MAGIC MAX

Lipolysis adapter



Laser lipolysis for subsequent liposuction

MAGIC MAX

HANDPIECES AND ADAPTORS

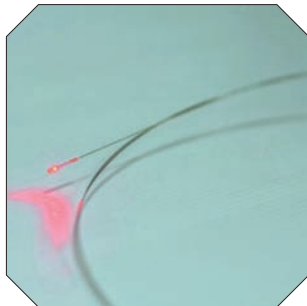
ENT handpiece



The handpiece is designed for out-patient treatment of various medical conditions of oral and nasal cavities.

MAGIC MAX

Phlebological fiber



The fiber tip is designed for EVLA procedures - treatment of varicose veins and vein ablation, the procedure being an alternative to conventional surgery. Fiber core diameter 400 or 600 micron.

MAGIC MAX

Single spot handpieces 1.2, 2, and 6mm



Shot-by-shot treatment of spider veins, wine stains etc. With integrated air skin cooling.

The handpieces can be used with any of the wave lengths.

MAGIC MAX,
MAGIC SUPER

Hair removal handpiece



Features a sapphire window and contact skin cooling, 1kW or 4 kW, 10x10mm or 10x25mm







MAGIC ONE;
(MAGIC MAX
and MAGIC
SUPER only in
combination
models of Plus
series)

MAGIC FR

The Magic FR is a long-pulsed Nd:YAG laser system. The 1064nm wavelength, high laser emission energy and extended spot size of the device provide for treatment of malformations deep in the skin beyond reach by any other wavelength. This is the best tool to remove vascular lesions of medium size and bigger, as well as a perfect tool for lifting procedures.

The laser system comes in a standard Magic FR version and an advanced Magic FR Full version with higher energy settings.

Application:

-  Vascular lesions over body and face;
-  Nonablative skin rejuvenation;
-  Nd:Yag laser lift;
-  Acne treatment;
-  Acne marks;
-  Pigmentation lesions.



Magic FR

Wave length, nm	1064
Operation mode	Free running
Max pulse energy	50J
Max energy density	6,300 J/cm ²
Pulse length	0.3 – 50ms
Max pulse repetition rate, Hz	100
Cooling system	Air-liquid, integrated
Spot size, mm	1-6mm, or 3-15mm

Magic FR Full

Wave length, nm	1064
Operation mode	Free running
Max pulse energy	70J
Max energy density	8,900 J/cm ²
Pulse length	0.3 – 50ms
Max pulse repetition rate, Hz	100
Cooling system	Air-liquid, integrated
Spot size, mm	1-6mm, or 3-15mm








EXTENSION OF YOUR AESTHETIC PRACTICE

Melsytech chooses to offer customers and their businesses as much flexibility as possible.

Use your specific investment, operation or ergonomics considerations, as well as popularity of specific procedures, and choose a combination of devices in a single casing.

Device combinations



#	Model	Magic Max	Magic Super	Magic ONE Lite 808.1kW	Magic ONE Full 808.4kW
1	Magic Max				
2	Magic Super				
3	Magic ONE Lite 808.1 kW				
4	Magic ONE Full 808.4 kW				

With aesthetic laser systems by Melsytech there is no need to worry about regular or periodic replacement of flash-lamps or any other limited resource components that may cause any downtime. Meslytech laser devices offer lowest cost of ownership and call for no any additional consumables to buy (except for disposable materials, for example, optical fiber for EVLA, which may not be used more than once subject to sanitary-hygienic standards).

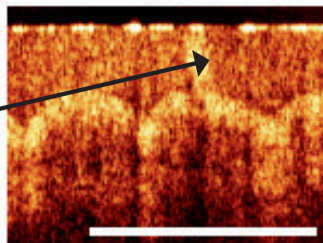


Diode-pumping is a state-of-the-art technology in medical application. The design of devices offers a huge potential, as both software and hardware can be easily upgraded. You may rest assured that Melsytech laser systems will stay in high demand and up-to-date equipment for years. Not only will this secure a fast payback, but it will be bringing you profits long after.

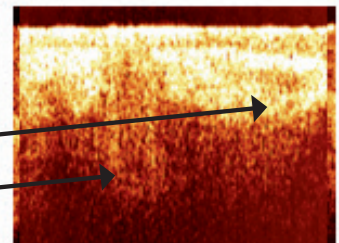
OCT is a unique device designed for noninvasive biological tissue diagnosis



Sudoriparous
gland



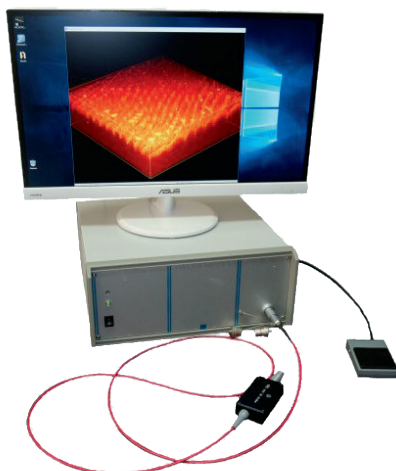
Hair
and
sebaceous gland



Optical coherence tomography (OCT) is a life-time method for biological tissues structure imaging. The method is referred to as "optical biopsy" owing to high image resolution (20-25 micron) and being an alternative to traditional excisional biopsy when the latter is not possible or undesirable in cases when no cell identification is required. It is best used for investing tissues study. The method is registered to be used in Russia (For life-time examination of skin morphology in health and disease by the optical coherence tomography method: Novel medical technology, 2008).

Visualization occurs as a result of registration of probing emission (low intensity light, near infrared band, up to 1.5mW) radiating back from tissue elements, that come to feature different refractive index and re-radiation characteristics.

OCT image is a 2D and 3D image of optical irregularities of the tissue at 1.5mm depth, in pseudocolor brown palette. It is aligned with the cross microscopic section.

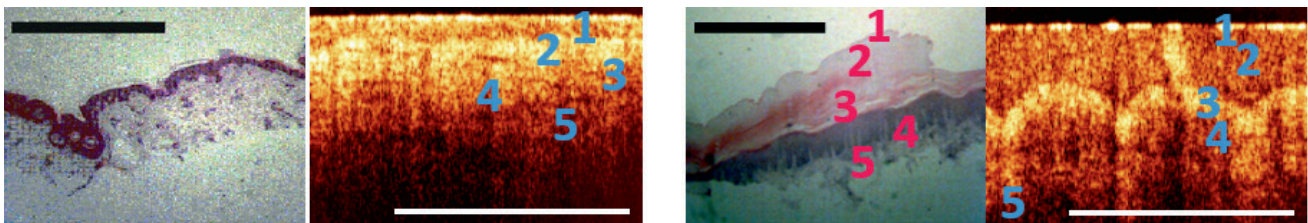


Principal OCT applications:

ophthalmology, gynecology, surgery, carcinology, dentistry, angiology, urology, dermatology, and cosmetology.

Dermatology application:

The method allows to acquire data related to morphological condition of healthy and pathologically modified skin in real time. OCT allows for visual differentiation of the epidermis and upper part of the dermis. The method is a tool to evaluate the condition of the dermo-epidermal junction area, dermis vessels, sebaceous and sudoriparous glands, hair follicle, all the unguual elements.



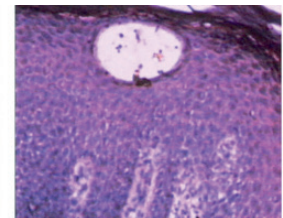
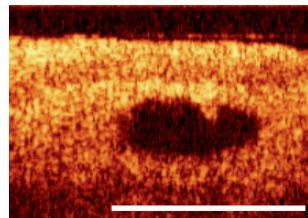
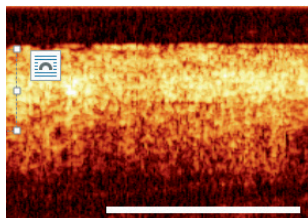
OCT image of healthy human skin: Left - thin skin (forearm), right - thick skin (planta).

1 - superficial part of the horny layer with poorly cohesive scales, 2 - middle and lower part of the horny layer with adherent scales, 3 - superpapillary region of cell layers of the epidermis, 4 - interpenetrating area of epidermal excrescences and dermal papillae, 5 - upper part of the reticular layer of the dermis.

The OCT visualizes major pathologic processes in dermis, and can be used for life-time diagnostic of dermatoses, including basal cell carcinoma, melanoma, differential diagnostic of melanomas and nevil, onychopathy.

Spongiosis in eczema - vesicles

Healthy skin



OCT provides for multifocal and manifold examination which allows to monitor abnormal changes during cosmetic procedures and treatments to determine effect and find early signs of side effects (for instance, preclinical development of atrophica cutis during corticosteroid therapy).

OCT images are interpreted via the following concepts: structural properties, layering, height, homogeneity, signal intensity within a layer, contrast of layers and areas with different signal intensity, boundary characteristics of layers and areas.

ADVANTAGES OF APPLICATION:

- noninvasive
- imaging on-the-fly
- multifocal and manifold examination, over-time examination
- high spatial resolution and high image contrast
- portable size, user friendly control, flexible probe, to be compatible with endoscopic gear.

Technical specification

Central wave length	1300nm
A-Scan Line Rate	92 kHz
Scanning depth	1,5 mm
Longitudinal resolution	20 micron
Lateral resolution	25µm
Sensitivity	90 dB
Optical power at object	0.75mW, complies with ANSI standard



MEDICAL LASER SYSTEMS
AND TECHNOLOGIES

CONTACT

000 MeLSyTech

address:

606026,
Nizhny Novgorod Region,
Dzerzhinsk,
1, Igumnovskoe Shosse,
Russia

tel

+7 831 2809630,

fax

+7 831 2809630

e-mail

info@melsytech.com

web

melsytech.com