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NASER - Nanowave Amplification by Stimulated Emission of Radiation

# NASERLIGHT CCAT\*

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\*COLD CATHODE FLUORESCENT LAMP —  
LIGHTING OF THE FUTURE

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NASER - Nanowave Amplification by Stimulated Emission of Radiation



# Lighting market

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Rapid growth of LED and other technologies has brought about revolutionary structural changes of the lighting market:

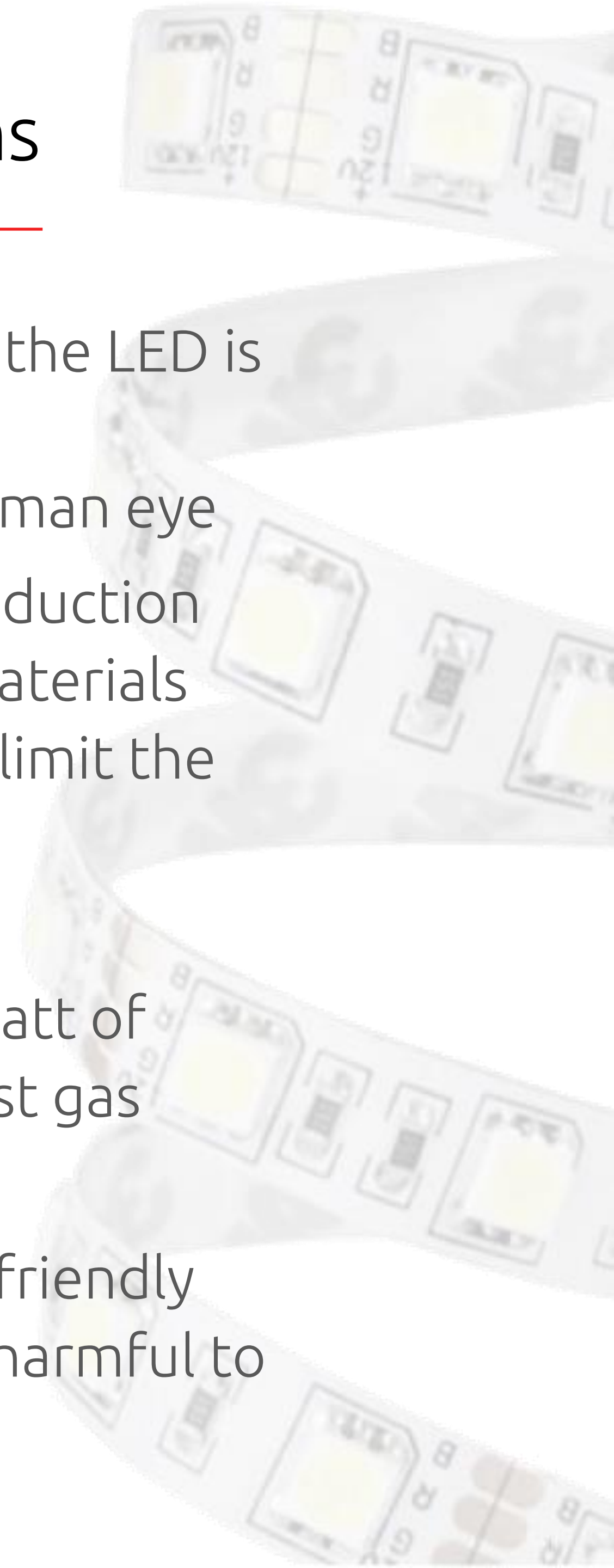
- Qualitative change – digital lighting, new lighting standards and regulations, increased service life of lighting equipment
- Quantitative changes — explosive growth of the market capacity, exponential growth of the number of new players, including those from related industries



# LED problems

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- The light spectrum of the LED is uneven and therefore unfavorable to the human eye
- The complexity of production and the cost of raw materials entail high prices and limit the service life of these technologies
- Ratio of lumens per watt of LEDs close to the latest gas discharge lamps
- Non-environmentally friendly leds components are harmful to the environment



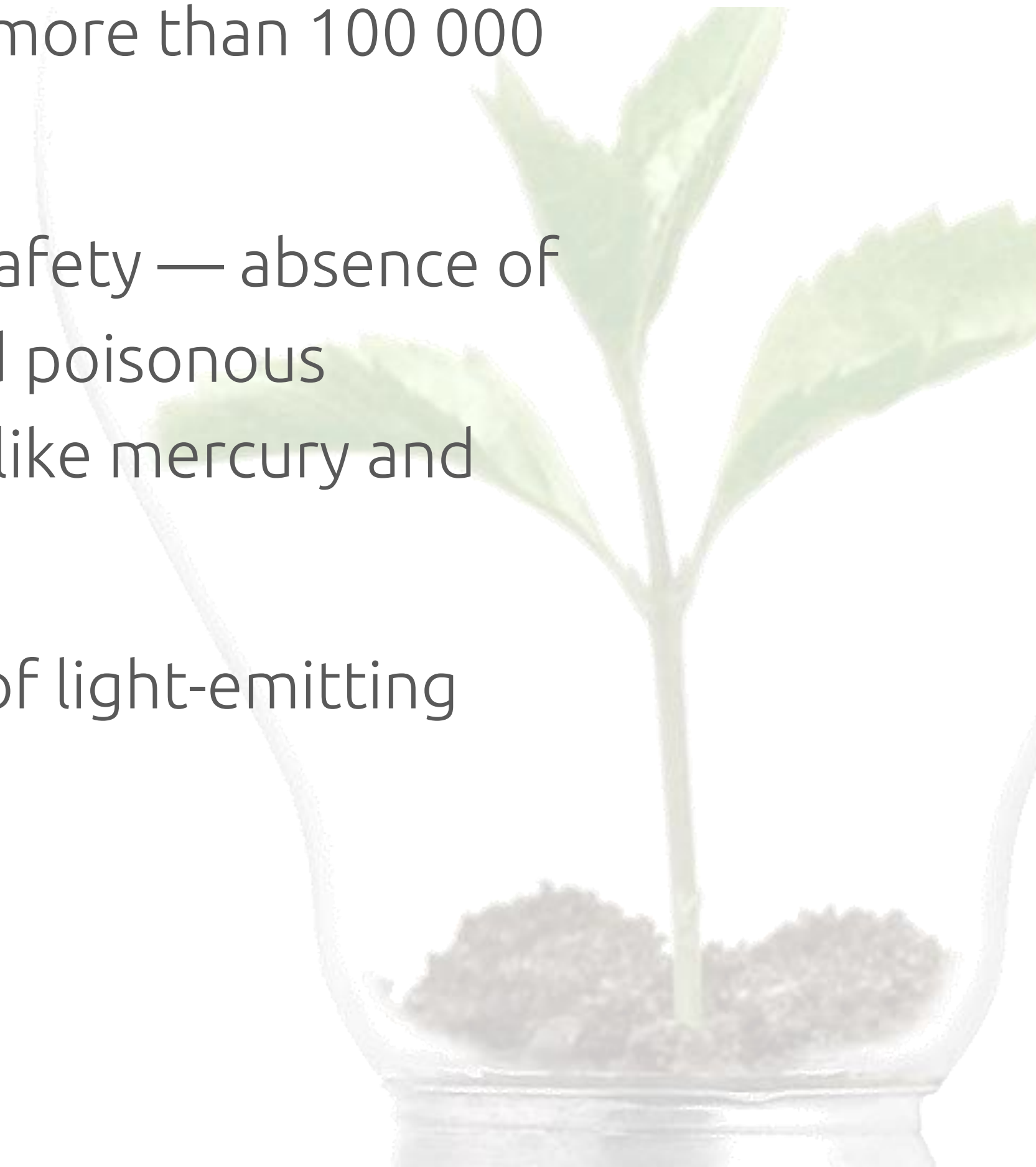


# Advantages of NASERLight CCAT

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## NASERLight CCAT Specs:

- High luminous efficiency and intensity
- Widespread in nature materials —
  - low production cost
  - ecological purity
  - simple recycling
- The light spectrum is favorable for human health
- Service life more than 100 000 hours
- Ecological safety — absence of harmful and poisonous substances like mercury and others
- Large area of light-emitting surface

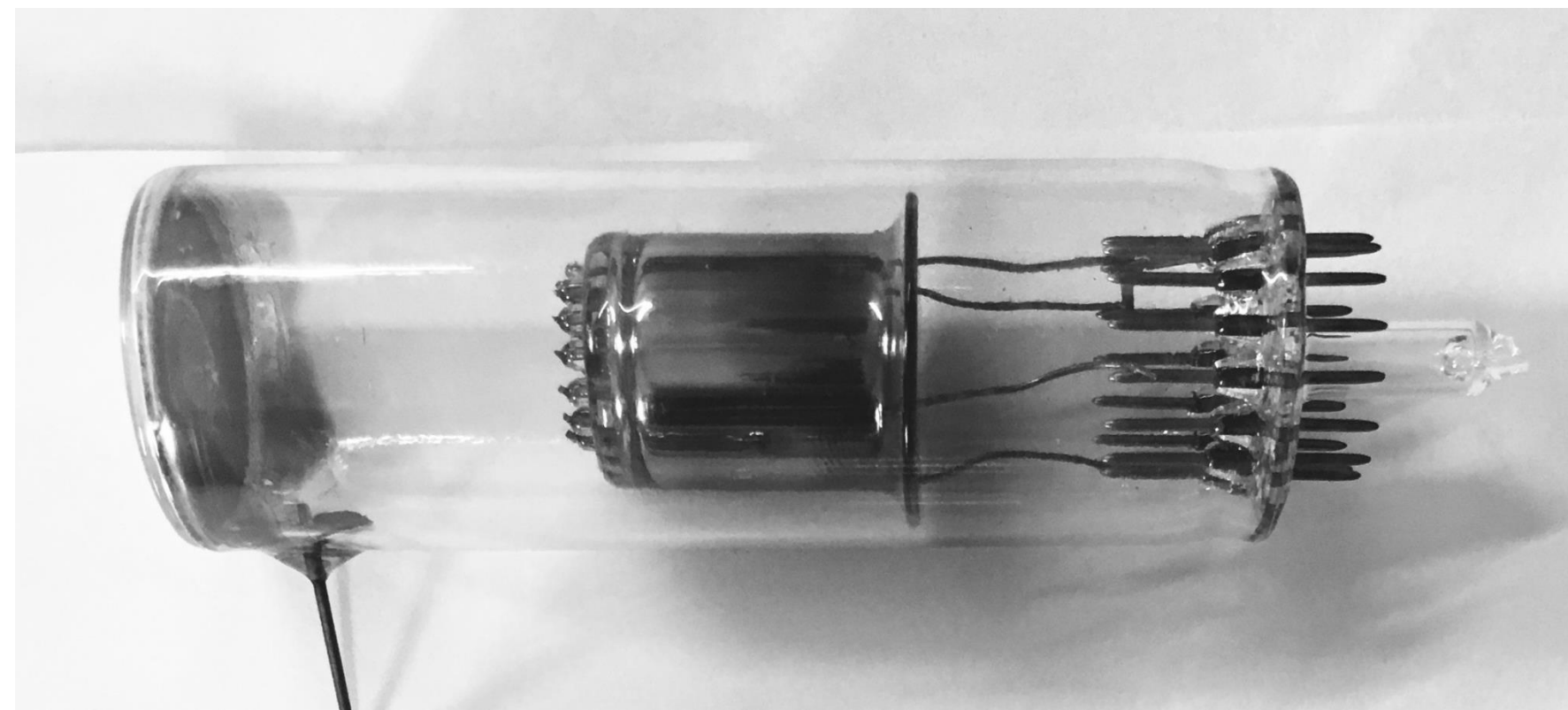




# The Naserlight CCAT design

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Using a NAsER quantum generator as a power source for luminescent vacuum lighting sources allows using any non-nanostructured electrically conductive materials (metals, graphite, etc.) as cold cathodes and makes it possible to create light sources of tens and hundreds of watts.



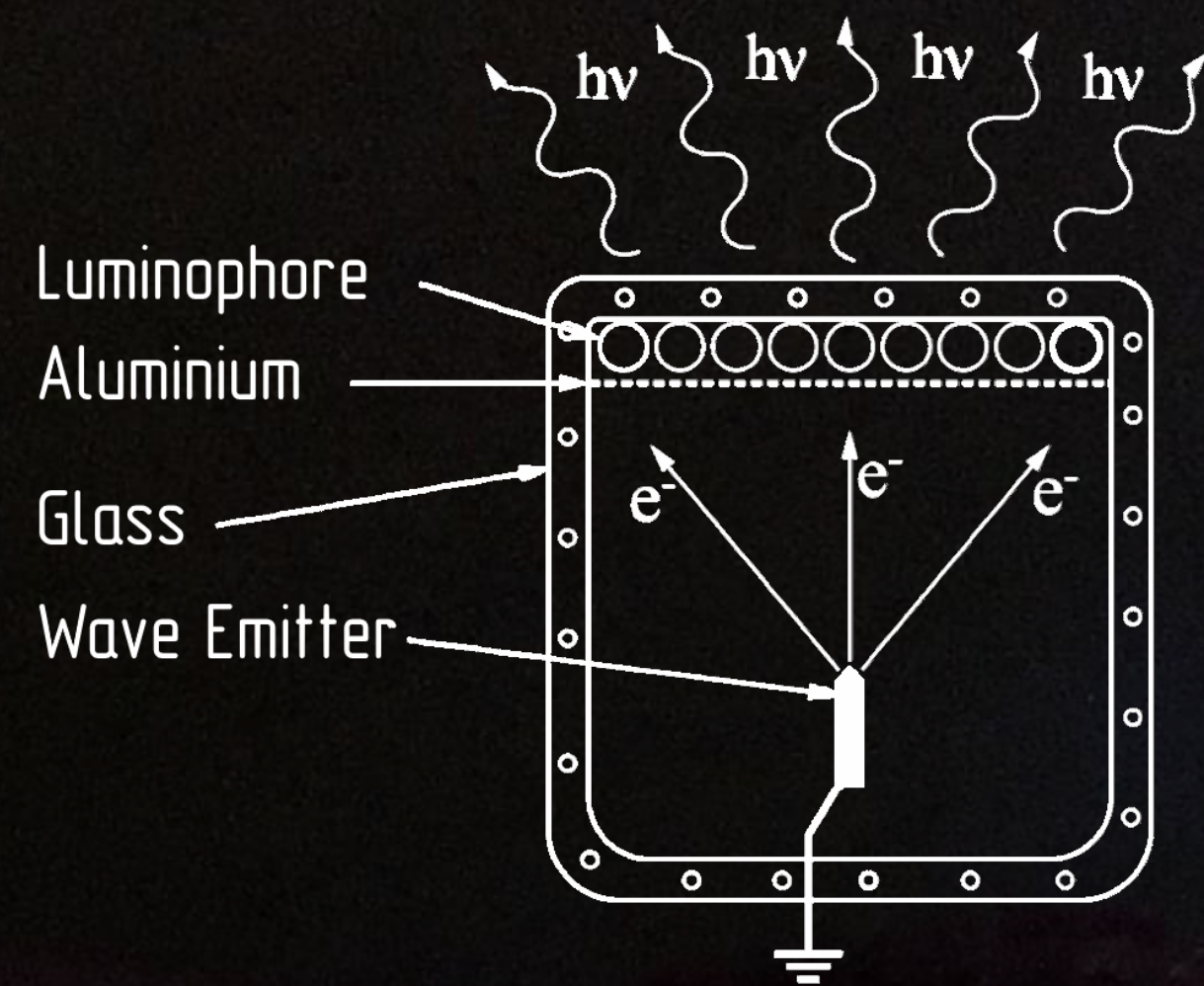
Cold cathode fluorescent lamp



Electron gun



# How the cold cathode fluorescent lamp works



The operational scheme of the cold cathode fluorescent light source



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# Parameters of modern light sources and NASERLight CCAT

Basic parameters	Energy saving lamp	LED lamp	CCAT
Lamp type	Gas discharge	Semiconductor	vacuum, nonincandescent
Lamp power, W	20	6	6
Light flux	1200	960	2400*
Efficiency, lm/W	60	180	400*
Resistance to environment	Medium	High -40° ÷ 85°C	High, -196° ÷ 150°C
Service life	10 000	50 000	100 000*
Average cost in mass production, USD	1,5 – 2 \$	2 \$	0,5 \$

\*Expected results



# Expenditures for 1 km of Naserlight CCAT street lighting per year

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Mercury-vapor lamps	LED lamps	CCAT lamps*
2 250 \$	810 \$	320 \$
25 000 W	9 000 W	3 600 W

\*Based on expected results

# Current project status

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- Preseed project development stage completed
- Experimentally confirmed the possibility of using NAsER generator in light sources with the cold cathode
- Applications for invention are filed with the patent offices in the USA and European Union countries
- Applications for the invention are being prepared for filing in China, Singapore, Japan and several other countries



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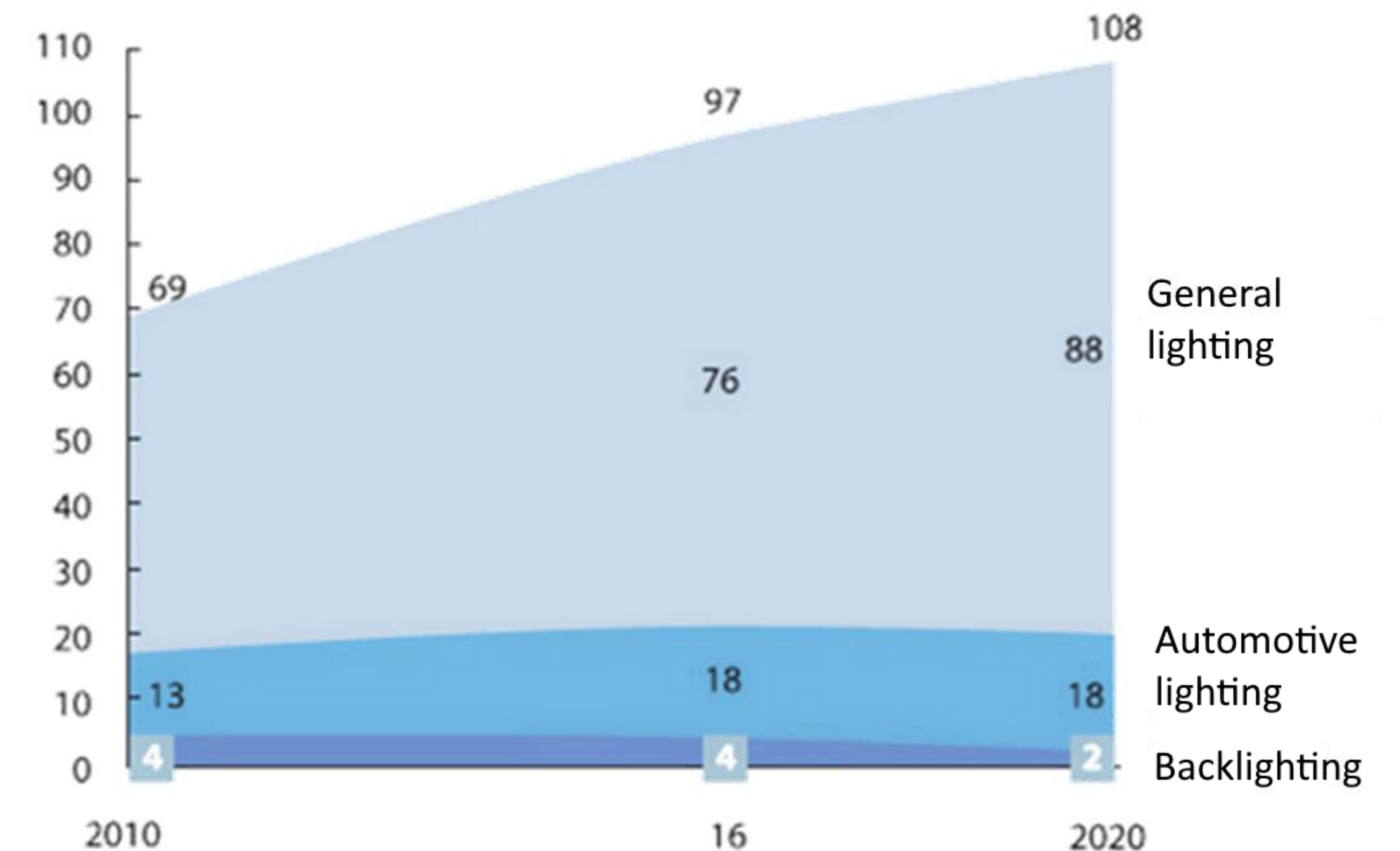




# NASERLight CCAT monetization strategy

- Lighting market - 100 billion USD
- The growth rate of the lighting equipment market - 3% per year
- Sale of exclusive rights to produce the product
- Sale of production licenses to producing companies

Lighting market trends by sectors





# Positive aspects of NASERLight CCAT for investment

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High profitability



Great development opportunities in various market segments



Confidence in project:

- effective team
- development experience
- completed preSeed stage



Intellectual property protection (patent application)



Growing lighting market



The presence of additional projects in the portfolio increases the sustainability of the company



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# Team



Pastukhov Andrey

Chief Technology Officer  
Managing Partner  
NASER Technology OÜ



Salnikov Dmitriy

Chief Financial Officer  
Partner  
NASER Technology OÜ



Totskiy Ilya

Executive Director  
Managing Partner  
NASER Technology OÜ

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# Work experience of NASER Technology R&D departament

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# New Advanced Innovative Technology

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