

# KTP LASER in skin care and cosmetics area

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## Objective

- Perform a landscape search in the area of KTP LASER with application in skin care and cosmetics
- Use PCS to derive insights and gain competitive perspective
- Understand the value chain and recent M&A activities

## Introduction

- The potassium titanyl phosphate (KTP) vascular laser has generally been used for the treatment of telangiectases and rosacea but has also recently been shown to be effective for the treatment of acne and wrinkles [Ming H.Jih ]
- Superficial pigmented lesions have also been reported to be treated with KTP laser- 532 nm [Seok Hyun Yun]
- Irregular pigmentation and telangiectasia can be treated with intense pulsed light sources (IPL) and 532 nm potassium-titanyl-phosphate lasers (KTP). It has also been used to reverse the dermal and epidermal signs of photo- and chronological aging [Pinar Avci]



KTP VIRIDIS DERMA Multipulse (Quantel Médical)



KTP 532 nm for Rosacea



KTP Laser Beauty- ROYAL-QL330

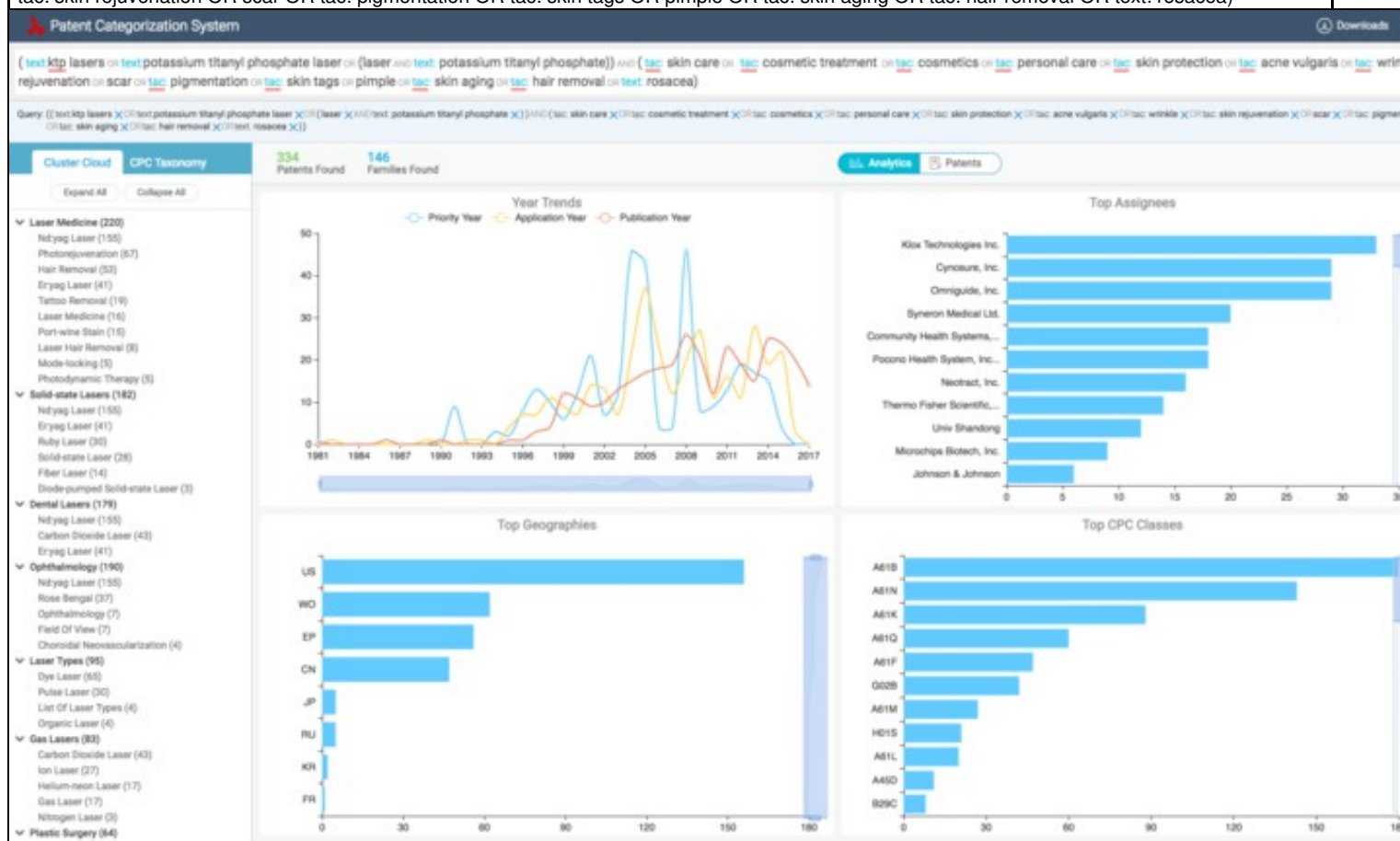
# Search in PCS

A search on PCS applications of KTP LASER in skin care was performed with the following search strategy:

(text:ktp lasers OR text:potassium titanyl phosphate laser OR (laser AND text: potassium titanyl phosphate))

AND

(tac: skin care OR tac: cosmetic treatment OR tac: cosmetics OR tac: personal care OR tac: skin protection OR tac: acne vulgaris OR tac: wrinkle OR tac: skin rejuvenation OR scar OR tac: pigmentation OR tac: skin tags OR pimple OR tac: skin aging OR tac: hair removal OR text: rosacea)



311 | 142

US-20060155266-A1

44 The method of claim 41 , wherein the further electromagnetic radiation source is one of a Q-switched ruby laser, a Nd:YAG laser, a **KTP laser** and an Alexandrite laser.

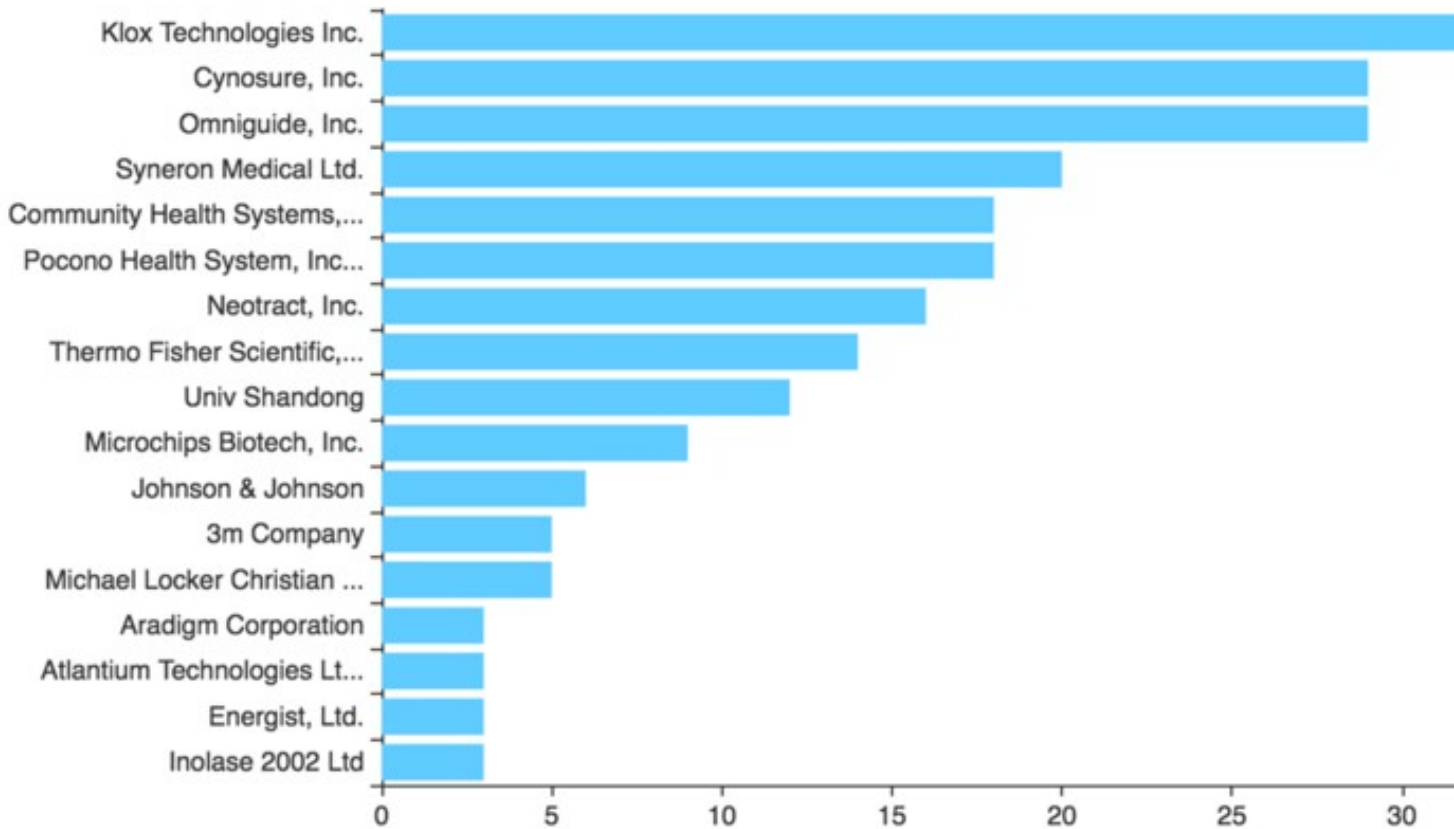
45 The method of claim 19 , further comprising the step of introducing

sparing of the epidermis. While sparing the epidermis is advantageous in order to decrease the side effects related to complete removal of the epidermis, several applications of NCR procedures may benefit from at least partial removal of epidermal structures. For example, photoinduced skin aging manifests not

## Top Assignee

## Top Assignees

Chart type:



- The top companies are big players in cosmetics and aesthetic devices from North America
  - ◆ Klox Tech- Quebec
  - ◆ Cynosure & OmniGuide - Massachusetts
  - ◆ Syneron & Neotract- California
- Two major hospitals in US, that have also patented technologies in this space:
  - ◆ Community Health Systems
  - ◆ Pocono Health Systems
- ThermoFischer Scientific patents come from its acquisition of ThermoLase Company

## Top Assignee Insights

### A) Johnson & Johnson

- **Johnson & Johnson** has patents related to the treatment for acne , pigmentations, scars, and wrinkles
- These patents are mainly using LASER therapy and don't use any chemical agent alongside

#### CN1984695A

Priority Date: 2004-07-16  
 Application Date: 2005-07-15  
 Publication Date: 2007-06-20

#### For light and the benefit agent for curing skin acne to release

... agent and pigmentation agent cleaning agent one or multiple kinds of these agents the combination of. 13 claim 12 said method wherein said scar release agent comprises at least one ... pigmentation agent cleaning agent one or multiple kinds of these agents the combination of. 28 according to claim 27 the reagent kit wherein said scar release agent comprises at least one ...

Families: 3

Assignee: Johnson & Johnson Consumer

CPC Class Code: A61N 5/062

#### EP1781374A1

Priority Date: 2004-07-16  
 Application Date: 2005-07-15  
 Publication Date: 2007-05-09

#### Treatment of skin with light and a benefit agent

... of any of claims 1, 2, and 3, wherein benefit agent is selected from the group consisting of a keratolytic agent, a scar mitigator, an anti-pigmentation agent, a ... agent, and combinations of one or more of such agents. 12. The method of claim 11 wherein the scar mitigator comprises at least one peptide. 13. The method of claim 11 wherein the anti-pigmentation agent comprises at least one ...

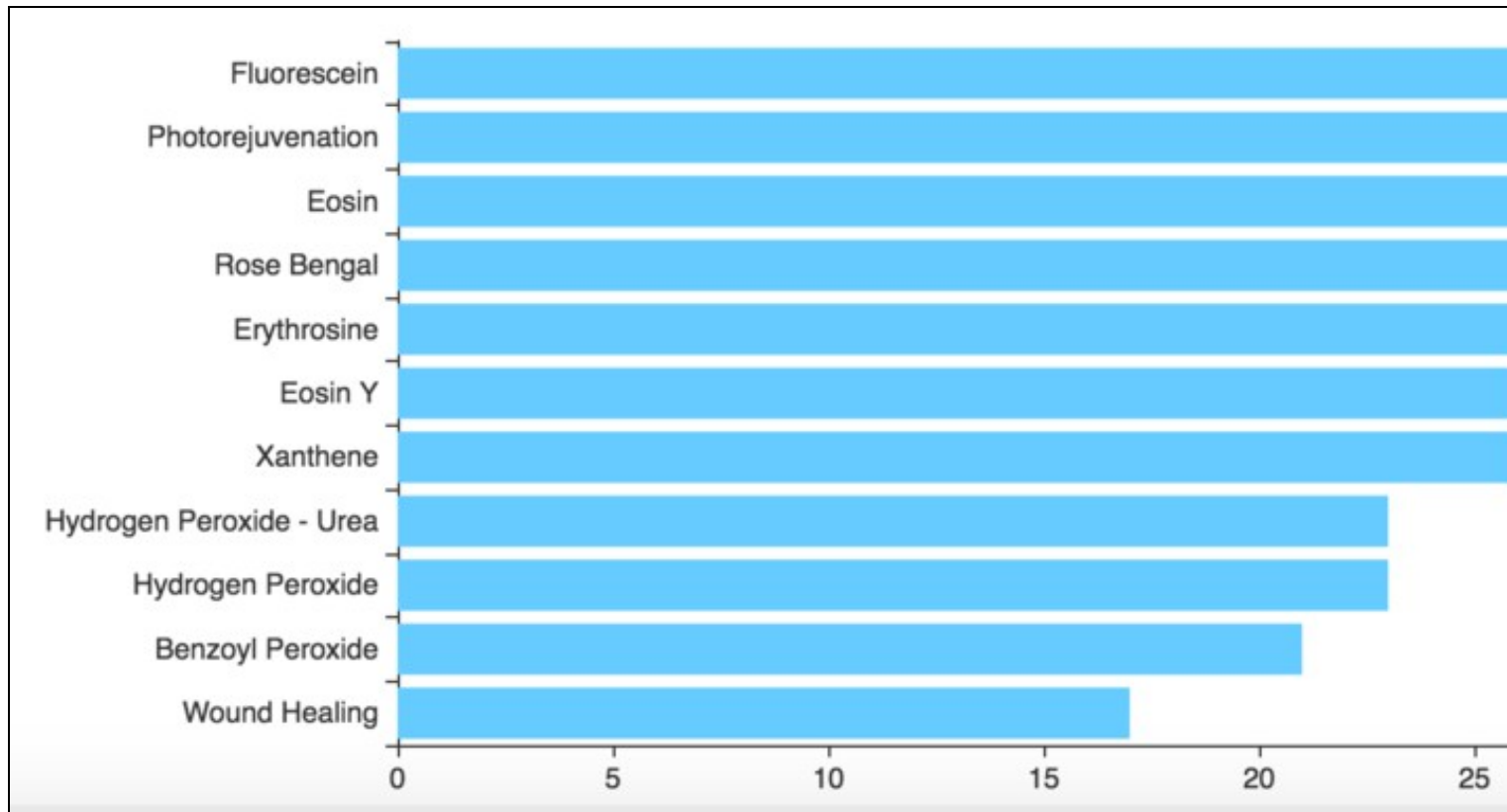
Families: 3

Assignee: Johnson & Johnson Consumer, Johnson And Johnson Consumer Company

CPC Class Code: A61N2005/0662

## B) Klox Technologies

- Patents from **Klox Technologies** mentions various Biophotonic compositions and their use as therapy for photo-rejuvenation and wound healing
- All the **Michael Locker Christian** patents are co-assigned to **Klox Technologies**



5 Patents Found 3 Families Found

Analytics Patents Export

**CN102256591A**  
Priority Date: 2008-11-07  
Application Date: 2009-11-06  
Publication Date: 2011-11-23  
**Oxidative photoactivated skin rejuvenation composition comprising hyaluronic acid, glucosamine, or allantoin**  
There is provided a skin rejuvenation composition which comprises at least one oxidant, at least one photoactivator capable of activating the oxidant, and at least one healing factor chosen from hyaluronic acid, glucosamine, or allantoin. 20 22 claim a method for the skin disease condition is selected from centigrade baker \*lan \* ...  
Families: 3 Assignee: Klox Technologies Inc, Michael Locker Christian Science And Technology Co Ltd CPC Class Code: A61K 8/736

**CN104755101A**  
Priority Date: 2012-09-14  
Application Date: 2013-09-13  
Publication Date: 2015-07-01  
**Biological optical chromophore group and electronic combined**  
The biophotonic compositions and the methods of the present disclosure are useful for promoting wound healing and skin rejuvenation, as well as treating acne and other skin disorders. ... any one of said method w composition can reduce scar tissue formation of. 34 according to claim 18# 21 24\*27 any one of said method further comprises the third \*1 dye a ...  
Assignee: Klox Technologies Inc, Michael Locker Christian Science And Technology Co Ltd CPC Class Code: A61K 41/0057

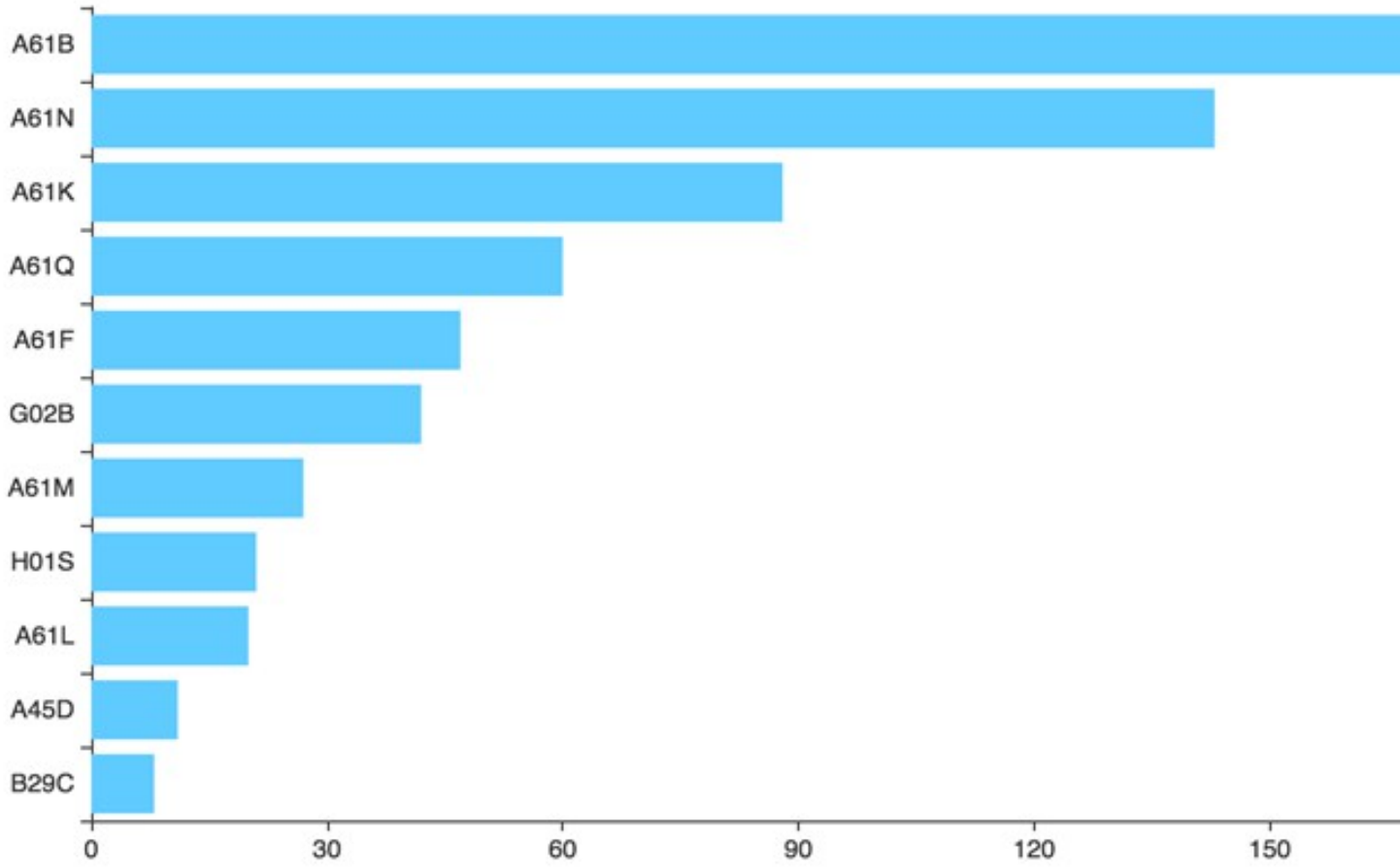
**CN104350125A**  
Priority Date: 2012-04-20  
Application Date: 2013-04-19  
Publication Date: 2015-02-11  
**Biophotonic compositions, kits and methods**  
The biophotonic compositions and their uses are useful for promoting wound healing and skin rejuvenation, as well as treating acne and various skin disorders. ... tissue the disease of acne and acne scar, And the ty photon composition said light has the first chromophore group the absorption spectrum of overlap the wave length. 71 for periodontal ...  
Assignee: Klox Technologies Inc, Michael Locker Christian Science And Technology Co Ltd CPC Class Code: A61K 41/0057

## Bibliographic Analytics

Main CPC?s:

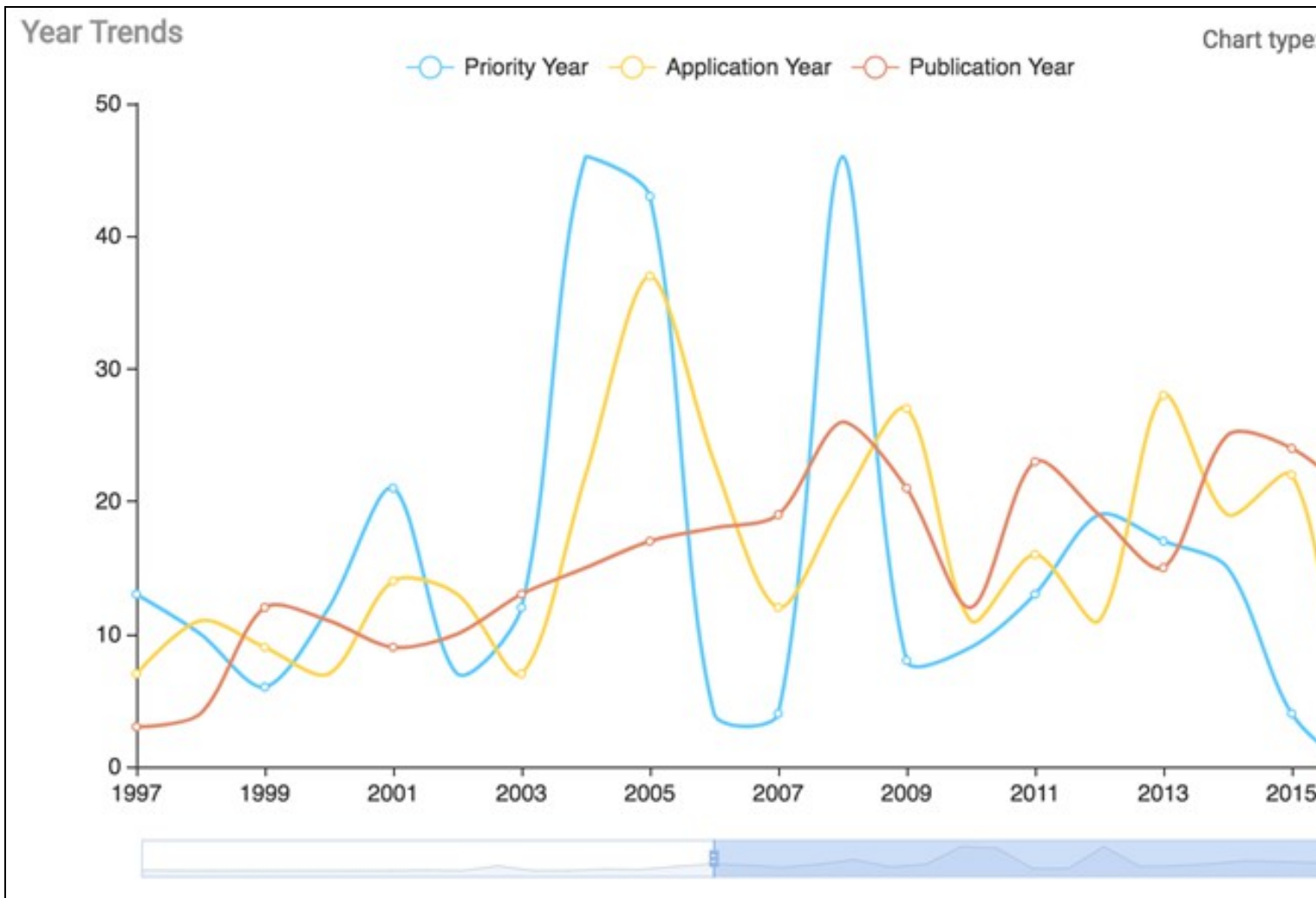
## Top CPC Classes

Chart type:



- A61B-treatment/diagnosis with cosmetic procedures
- A61N- Use of electrotherapy, magneto therapy, radiotherapy

**IP Activity:**



- IP activity started 20 years and saw a peak 10 years later
- Very recently there is a decrease in the IP activity

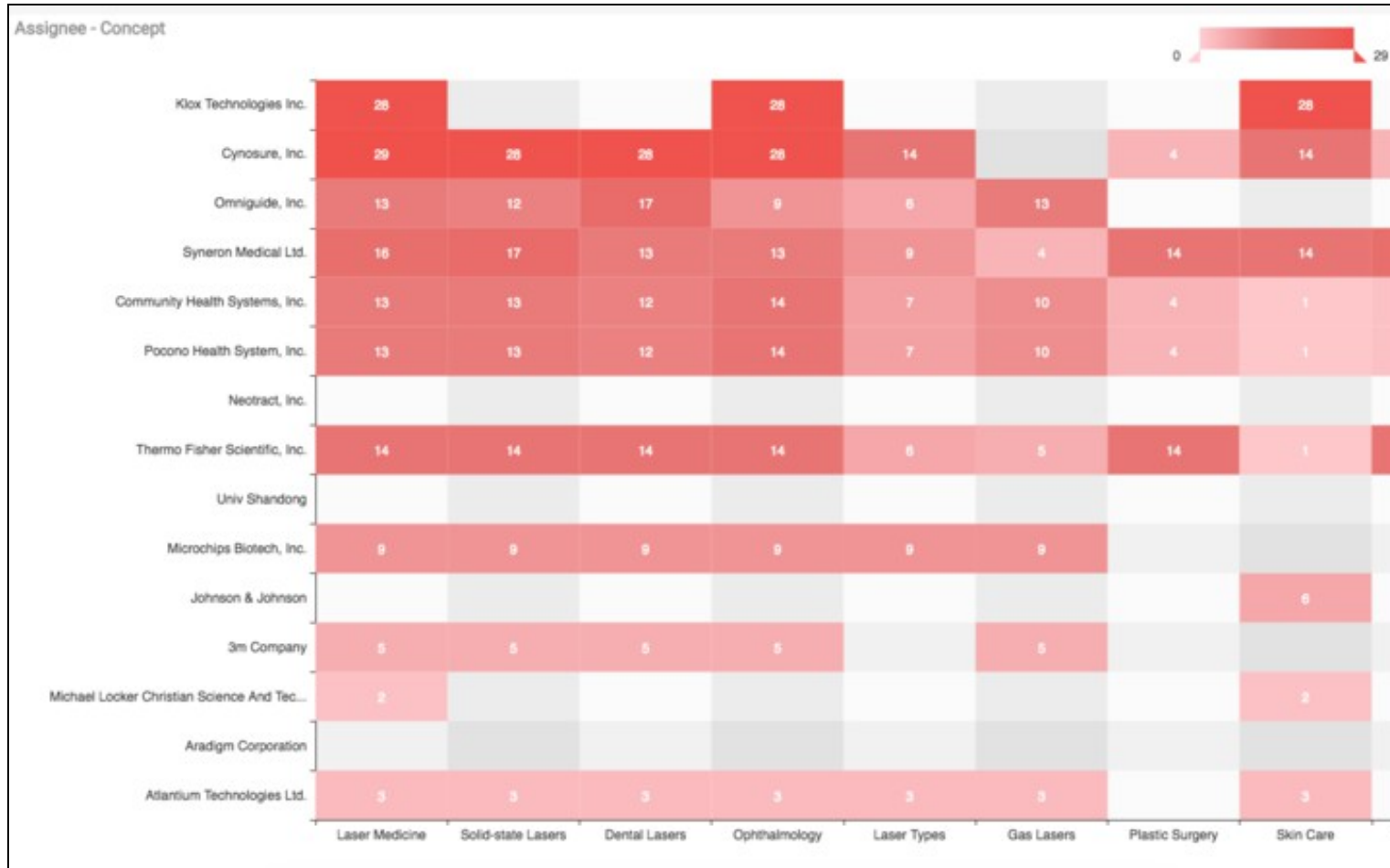
### Geographical Distribution



- All the product based companies- Klox, Cynosure, OmniGuide, Syneron have heavy presence on the therapy based classes- A61B, A61N, A61K, A61Q and A61F
- Community Health Systems and Pocono Health Systems have patents in therapy based classes of A61B, A61N, A61K and A61F
- Technology development companies, e.g. 3M, have patented in upstream research like development of physical phenomena- G02, B23, B29 etc.

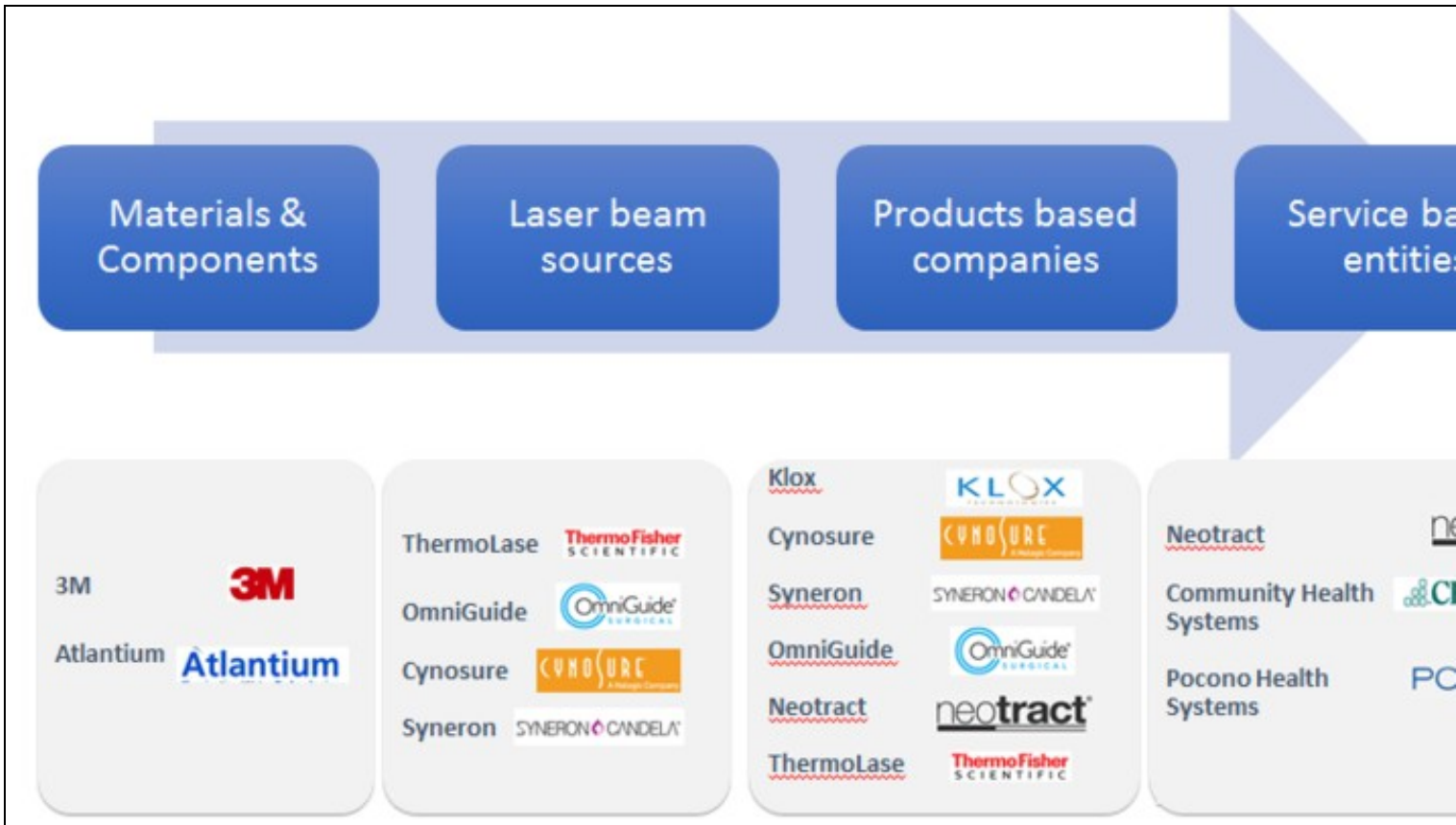
## Technical Insights: Concepts vs Top Assignees

### Technology Concepts:



- Cynosure patents disclose technologies related to Laser medicine, laser types and application in skin care, plastic surgery and ophthalmology
- Klox has rather focused patent disclosures- Laser medicine in ophthalmology and skin care.
- J&J patents are focused on skin care application and little disclosure on Laser technology itself.
- Syneron, Thermo Fischer(ThermoLase), Community Health Systems and Pocono Health Systems patents have varied claims

## Value Chain Analysis



### Latest M&A Activity in the Space

- Klox Technologies and LEO Pharma establish a jointly owned company to further develop and commercialize Klox's Bio-Photonic technology in dermatology including Kleresca® for acne and Kleresca® for skin rejuvenation [[Leo-Pharma](#)]
- Hologic, a developer and manufacturer of medical and diagnostic products, has recently purchased Cynosure. The acquisition is to address the demand for medical aesthetics market and more specifically non-surgical products that Cynosure makes [[Reuters](#)]
- Botox maker Allergan Plc agreed to buy Cynosure's rival Zeltiq Aesthetics Inc for about \$2.48 billion
- Apax Partners has acquired Syneron Candela in a deal valued at \$400 Mn. Syneron Candela products include multi-wavelength picosecond laser systems for pigmented lesions, for female health and for removing tattoos, and alexandrite lasers for hair removal [[Optics](#)]