

KTP LASER and Skin care

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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)]



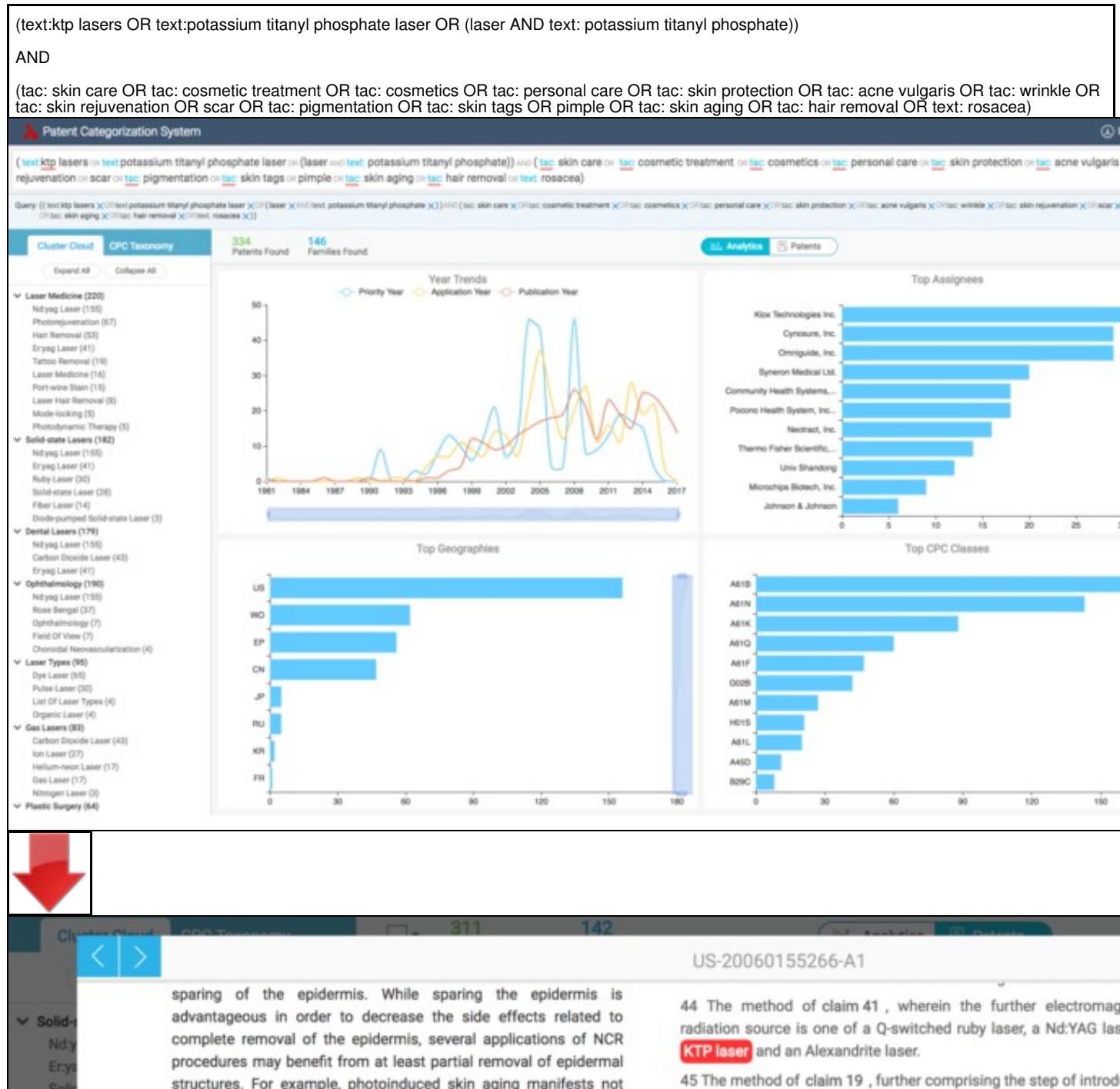
[KTP 532 nm for Rosacea]



[KTP Laser Beauty- ROYAL-QL330]

Search in PCS

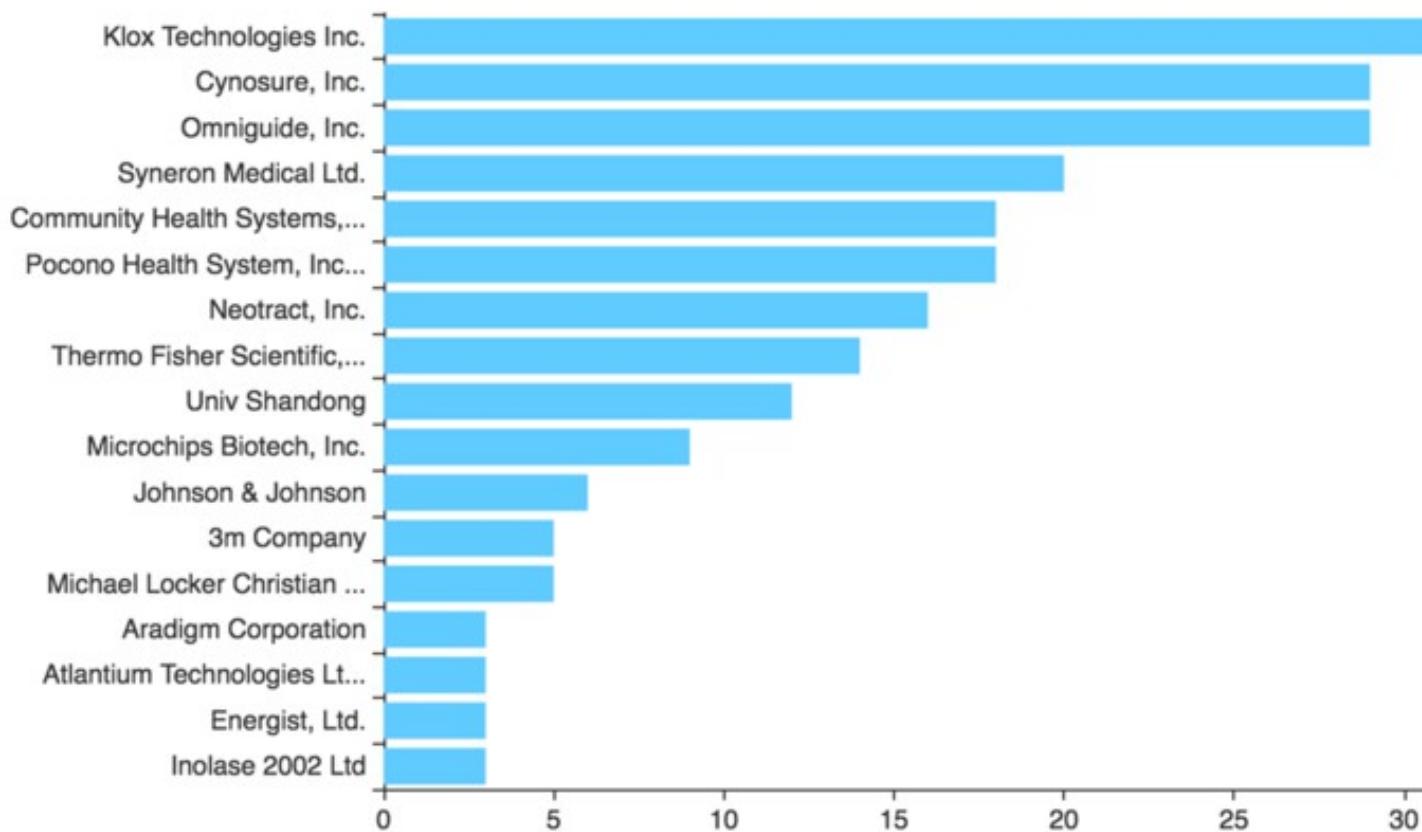
A search on PCS applications of KTP LASER in skin care was performed with the following search strategy:



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 & Neotrac- 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

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

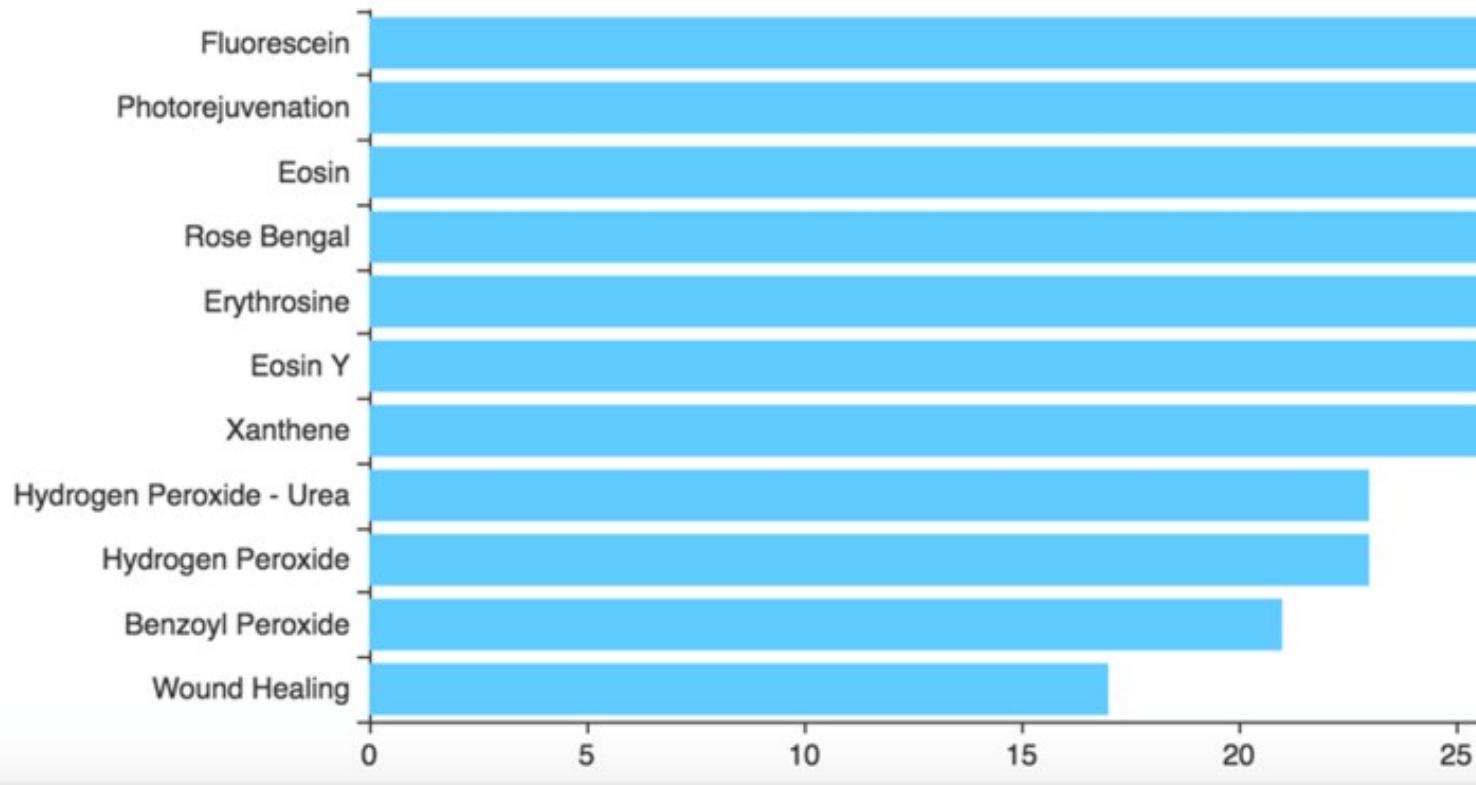
... of any of claims 1, 2, and 3, wherein benefit agent is selected from the group consisting of a keratolytic agent, a scar mitigator, an anti- pigmentation agent, a agent, and combinations of one or more of such agents. 12. The claim 11 wherein the scar mitigator comprises at least one peptide. 13.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

Families: 3

Assignee: Johnson & Johnson Consumer, Johnson And Johnson Consumer Companies

CPC Class Code: A61N2005/0662

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



- Patents from **Klox Technologies** mention various Biophotonic compositions and their use as therapy for photo-rejuvenation and wound healing

| 5 Patents Found | | 3 Families Found | Analytics | Patents | Export |
|--------------------------|---|---|-----------|---------|--------|
| <input type="checkbox"/> | CN102256591A | Oxidative photoactivated skin rejuvenation composition comprising hyaluronic acid, glucosamine, or allantoin | | | |
| | Priority Date: 2008-11-07 Application Date: 2009-11-06 Publication Date: 2011-11-23 | 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. The composition can reduce skin tissue formation of acne and acne scar and acne rosacea. 20 22 claim a method for the skin disease condition is selected from centigrade baker * Ian * ... | | | |
| | | Families: 3 Assignee: Klox Technologies Inc, Michael Locker Christian Science And Technology Co Ltd CPC Class Code: A61K 8/736 | | | |
| <input type="checkbox"/> | CN104755101A | Biological optical chromophore group and electronic combined | | | |
| | Priority Date: 2012-09-14 Application Date: 2013-09-13 Publication Date: 2015-07-01 | 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 will reduce skin tissue formation of acne and acne scar and acne rosacea. 20 22 claim a method for the skin disease condition is selected from centigrade baker * Ian * ... | | | |
| | | Assignee: Klox Technologies Inc, Michael Locker Christian Science And Technology Co Ltd CPC Class Code: A61K 41/0057 | | | |
| <input type="checkbox"/> | CN104350125A | Biophotonic compositions, kits and methods | | | |
| | Priority Date: 2012-04-20 Application Date: 2013-04-19 Publication Date: 2015-02-11 | 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 biophotonic 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 | | | |

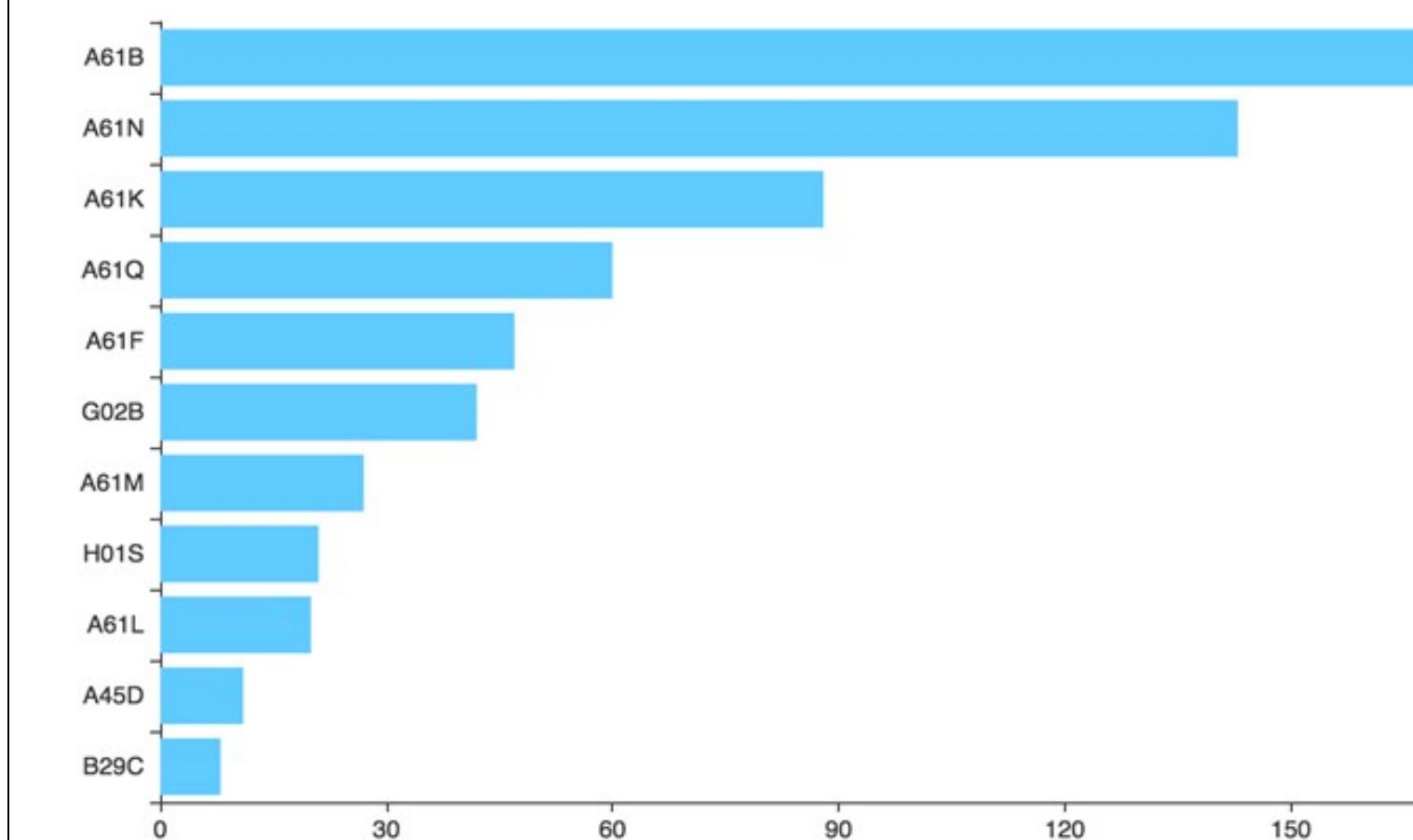
- All the Michael Locker Christian patents are co-assigned to **Klox Technologies**

Bibliographic Analytics

Main CPC?s:

Top CPC Classes

Chart type:

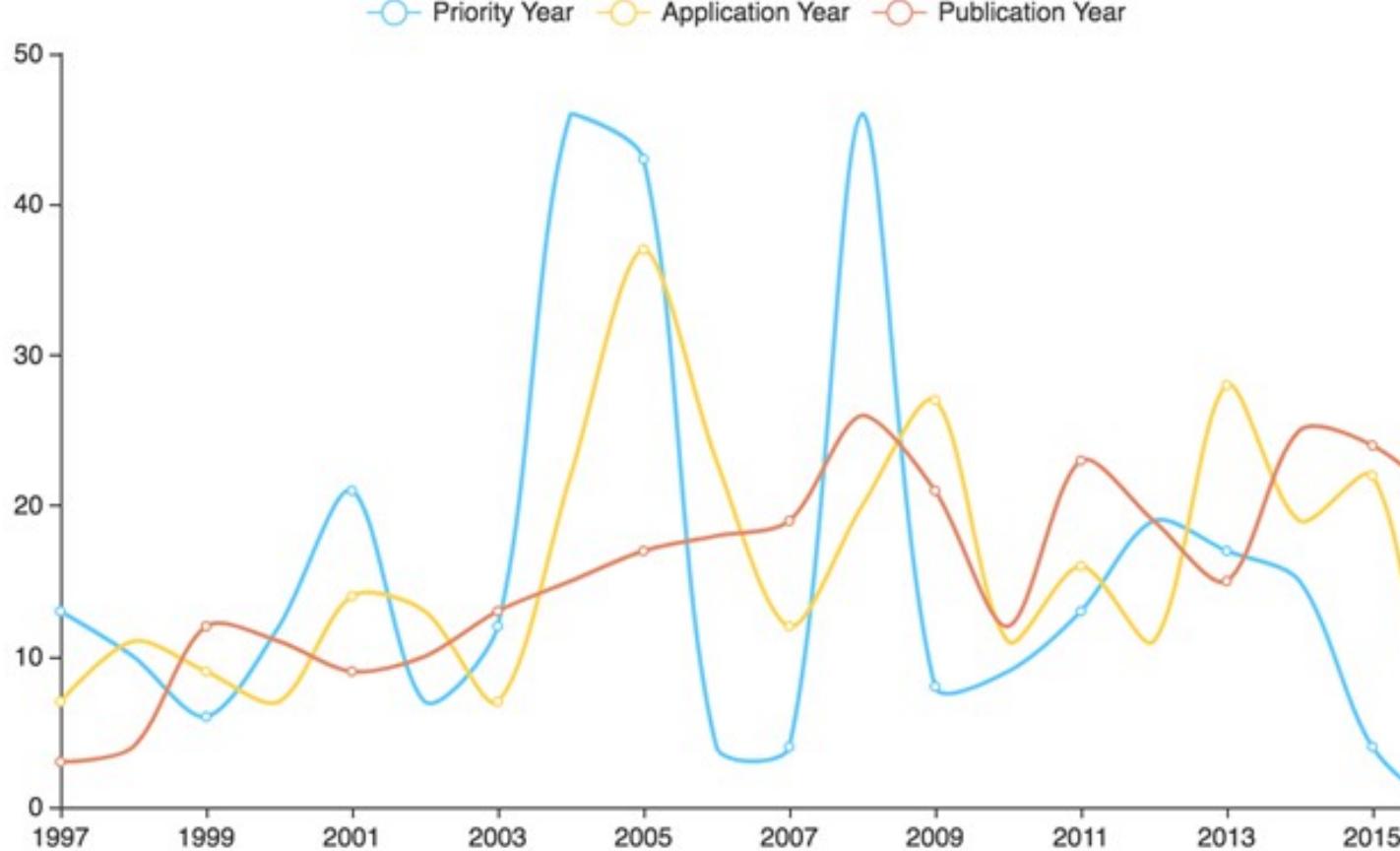


- A61B-treatment/diagnosis with cosmetic procedures
- A61N- Use of electrotherapy, magneto therapy, radiotherapy

IP Activity:

Year Trends

Chart type

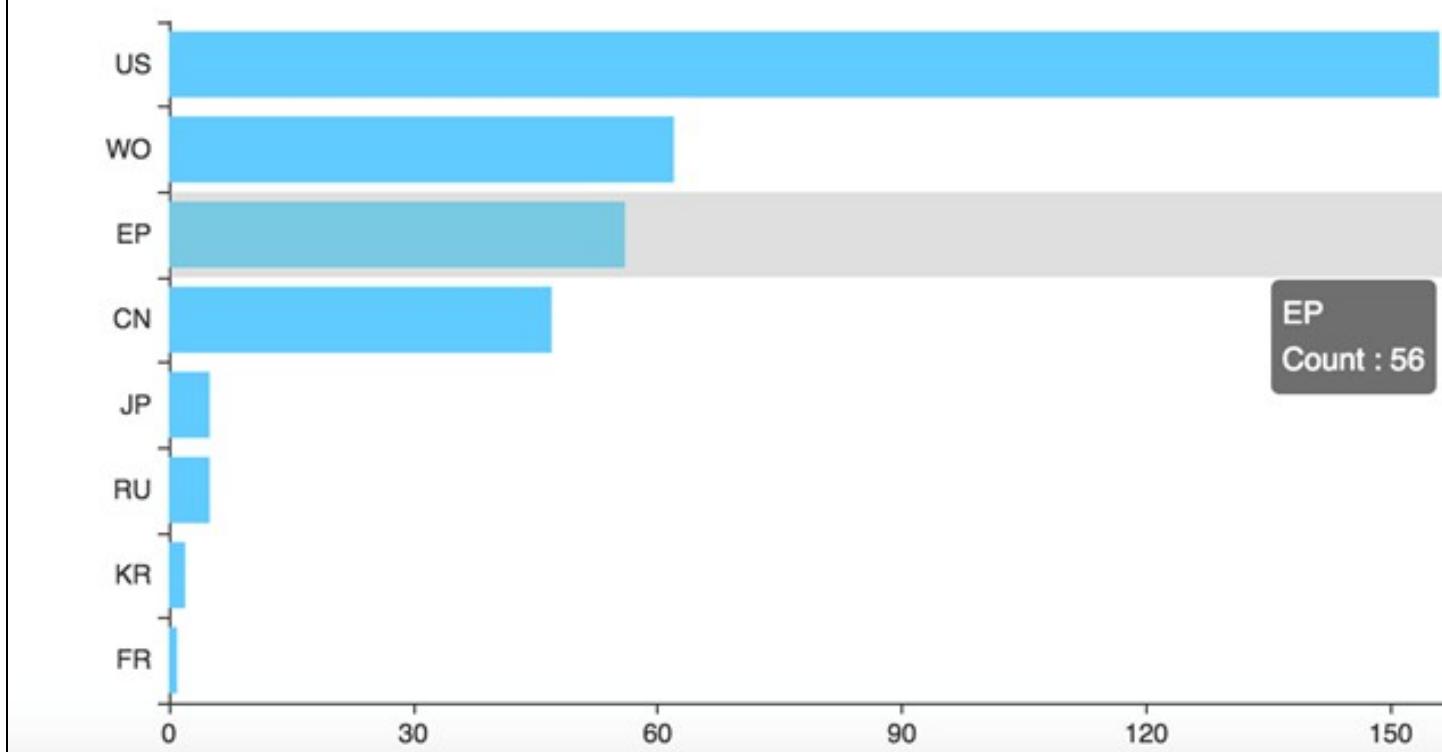


- IP activity started 20 years and saw a peak 10 years later
- Very recently there is a decrease in the IP activity

Geographical Distribution

Top Geographies

Chart type:

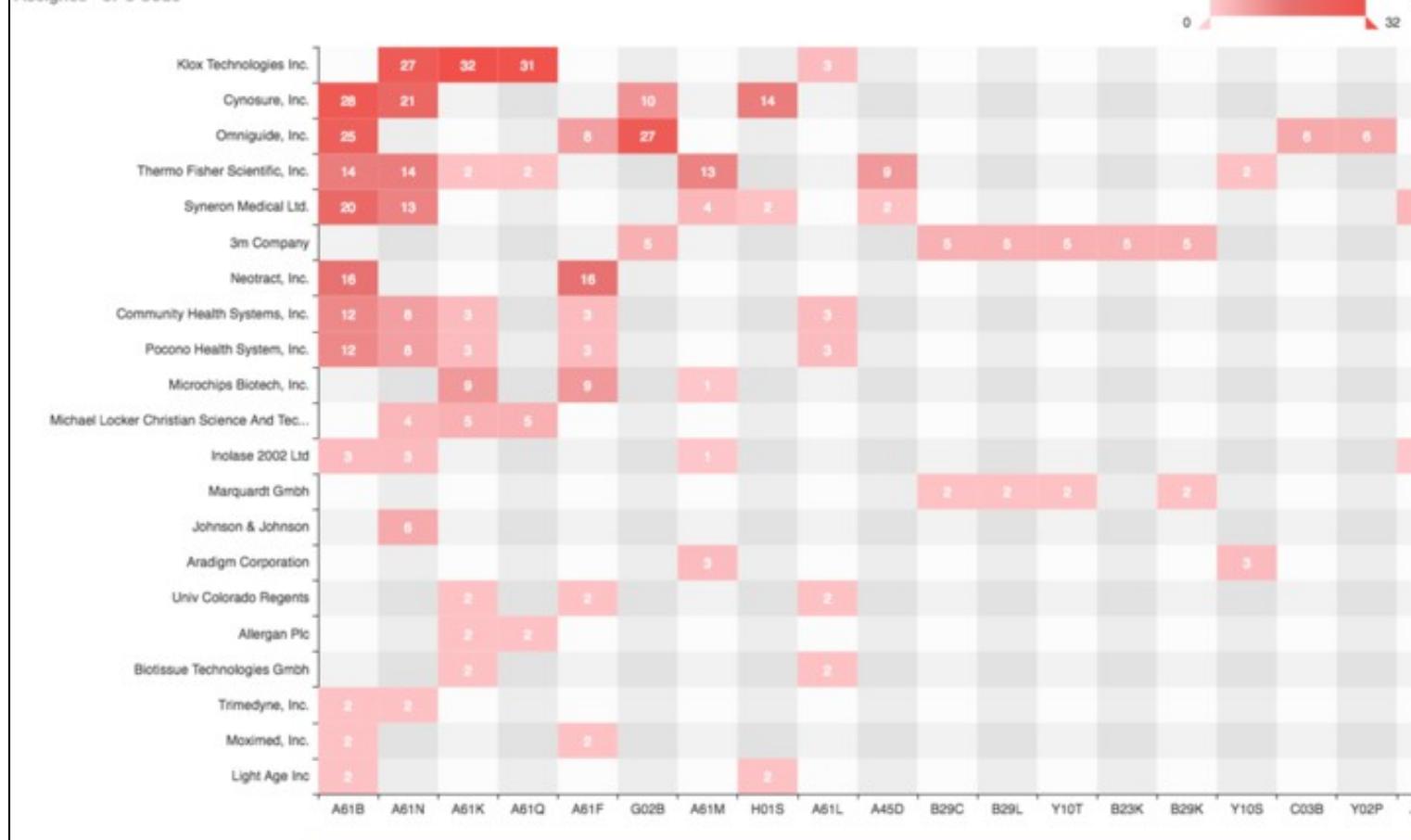


- Most of the patents in this technology are from US, Europe or China. There is hardly any activity from other geographies

Technical Insights: CPC Distribution in Top Assignees:

CPC Distribution:

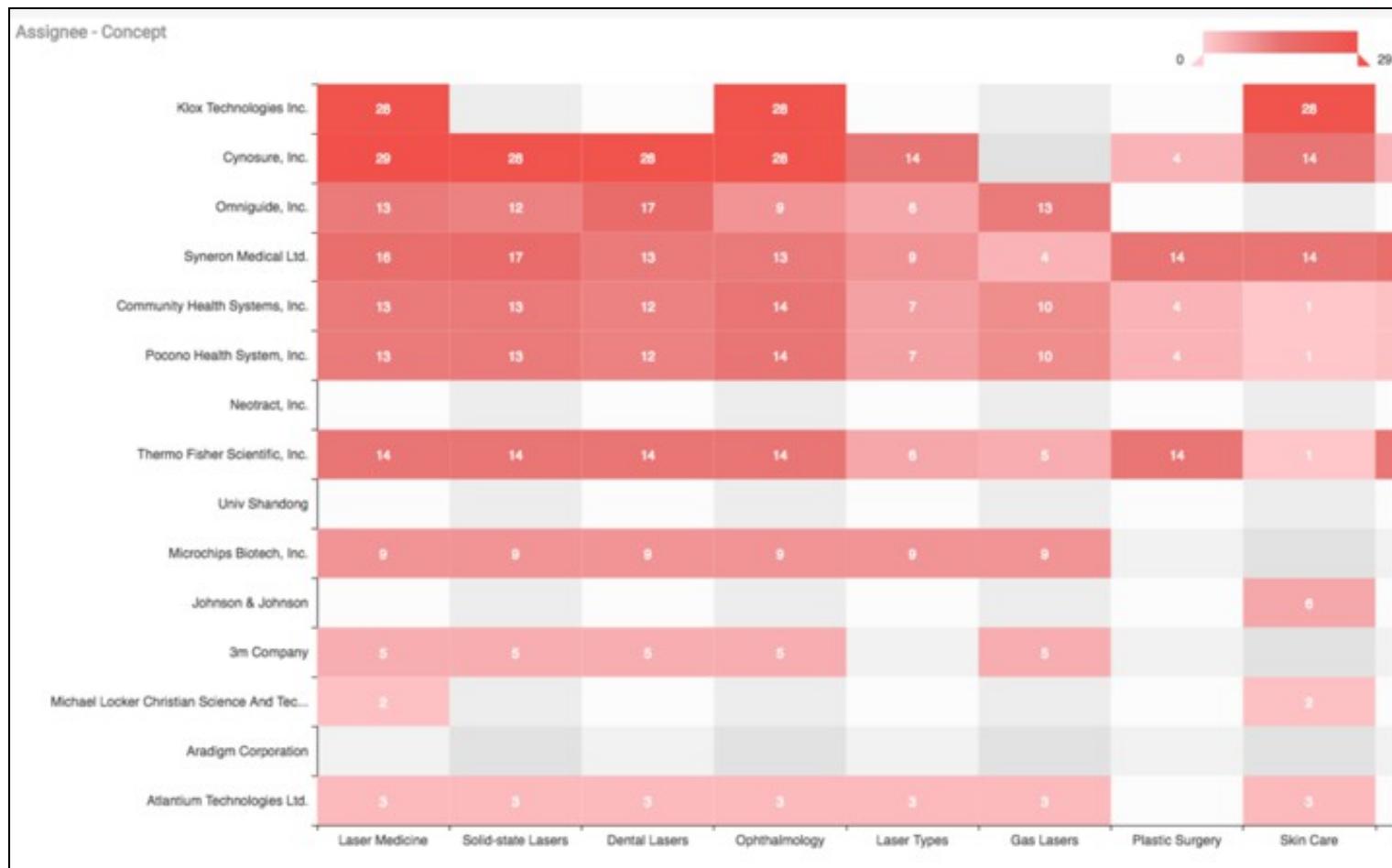
Assignee - CPC Code



- 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

Materials & Components

3M



Atlantium



Laser beam sources

ThermoLase

OmniGuide

Cynosure

Syneron

Products based companies

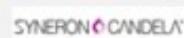
Klox



Cynosure



Syneron



OmniGuide



Neotrac



ThermoLase



Service based entities

Neotrac

Community Health Systems

Pocono Health Systems

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](#)]