

# SLN: Verein Schweizer Laser und Photonik Netz

Dr. Christoph Harder

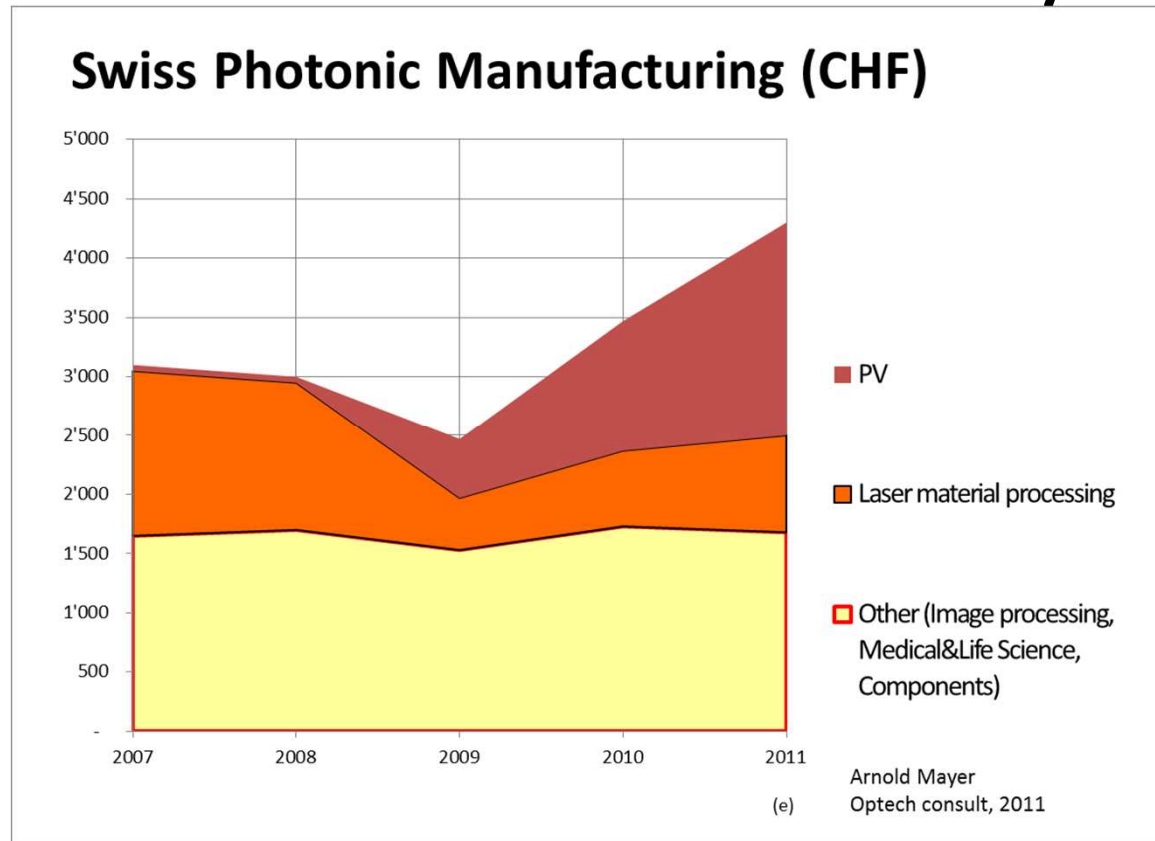
[harder@swisslaser.net](mailto:harder@swisslaser.net)

[www.swisslaser.net](http://www.swisslaser.net)

May 16, 2012



# Swiss Photonics Industry



- 4.5BCHF/year, 20'000 people employed, 10% of BIP enabled by Photonics
- #2 in Europe per capita (according to Optech Consult)
- Dramatic growth of PV industry in 2011
- Swisslaser > SLN > Swissphotonics

# Swisslaser: Best practice

- ❑ Swiss companies have high innovation content and tend to protect innovation many times as «trade secret» (watch industry).
- ❑ Silicon valley (hiring from competition) and in China (reverse engineering and copying) is tough competition to our innovation model
  
- Best practice laboratories (center of competence)
  - SNAPP:
    - Swiss National Application lab for Photonic tools and Photonic manufacturing
    - Contact: Luescher@swisslaser.net
  - SNFL:
    - Swiss National Fiber Lab
    - Contact: Romano@swisslaser.net
  - In preparation:
    - Swiss «best practice» photonic packaging platform
    - Contact: Bosshard@swisslaser.net
    - Swiss fabless interest group
    - Contact: Harder@swisslaser.net

# Photonic Packaging Platform

- Packaging of photonic components needs:
  - Expensive precision robots, Ficontec, finetech, BESI (Esec), etc.
  - Development of robust, reliable and low cost processes designed for devices
  - Low volume capability. Medium volume handmade and high volume automatised
- **Threat:**
  - From «**Made in Switzerland**» to «**Engineered in Switzerland**» and made in China to «**Engineered and Made in China**»
  - China
    - «Best practice» (copy), «synergies» (moonlighting, stealing of engineers)
    - Oclaro and JDSU packaging fabs: Next to each other (!)
- **Opportunity:**
  - We have several companies in Switzerland with similar equipment and similar processes addressing different markets
  - **Swiss best practice packaging platform center in Alpnach**
    - Competitive analysis (reverse engineering)
    - Infrastructure for process development and pilot series
    - Contact: [Bosshard@swisslaser.net](mailto:Bosshard@swisslaser.net)

# Fabless Chip Manufacturing

- Fabrication of semiconductor chip requires:
  - Exact knowledge of customers needs
  - Material know-how and design skills. Knowledge of “design rules”
  - High fix cost of maintaining a world class wafer-fab
- **Threat:**
  - Small companies in Switzerland cannot afford their own wafer fab
  - Small Swiss companies might pick the «wrong» wafer fab as foundary and might get inferior product
- **Opportunity:**
  - We have several companies in Switzerland who are fabless
  - Swiss “best practice” foundary users group
    - Exchange among each other information about wafer fabs
    - Contact: [Harder@swisslaser.net](mailto:Harder@swisslaser.net)