

## Global leadership in automated inspection of optical crystals



Scientific Visual SA <http://scientificvisual.ch/> is the world leader for inspecting **industrial crystals** (Sapphire, Quartz, Ruby, etc) **prior the polishing process**. It lets manufacturers save significant processing costs related to polishing initially defective material. Currently defects in crystal production are mostly identified after the costly slicing and polishing to transparency. In the case of Sapphire, from 7 to 20% of already processed items are rejected due to internal defects such as cracks and bubbles.

Sapphire industry benefits from an average 20% annual growth, which is fuelled by LED production, Smartphones, Watch covers, electronic and defence industries. The new inspection system creates a disruption in the current industrial process of Sapphire and it therefore generates a significant interest in the market place.

Apart of Sapphire and Ruby, the technology has been successfully applied to inspect crystals used for power electronic components in electrical vehicles, dental implants and high end optical lenses.

The company was attributed the **Seal of Excellence** from the European Commission Horizon 2020 project and won the **Swiss Innovation Alliance Award**.

Primary markets are synthetic sapphire growers and cutters for the watch, semiconductor and optics industries. By far the largest market in industrial gemstones (250 tons/year; US \$2.8 billion by 2010), the synthetic sapphire market has an annual growth rate of 20%, driven by growing demand from the semiconductor and, recently, by smartphone industry. The Swiss watch industry is a major consumer of industrial sapphire and is our first target market. The early rejection of defective pieces saves roughly CHF 1.5 per sapphire watch glass produced in Switzerland, which transforms to CHF 30 M annually in the Swiss watch industry alone.

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