

ASSCO - Application Study of Sensible Components Overmolding

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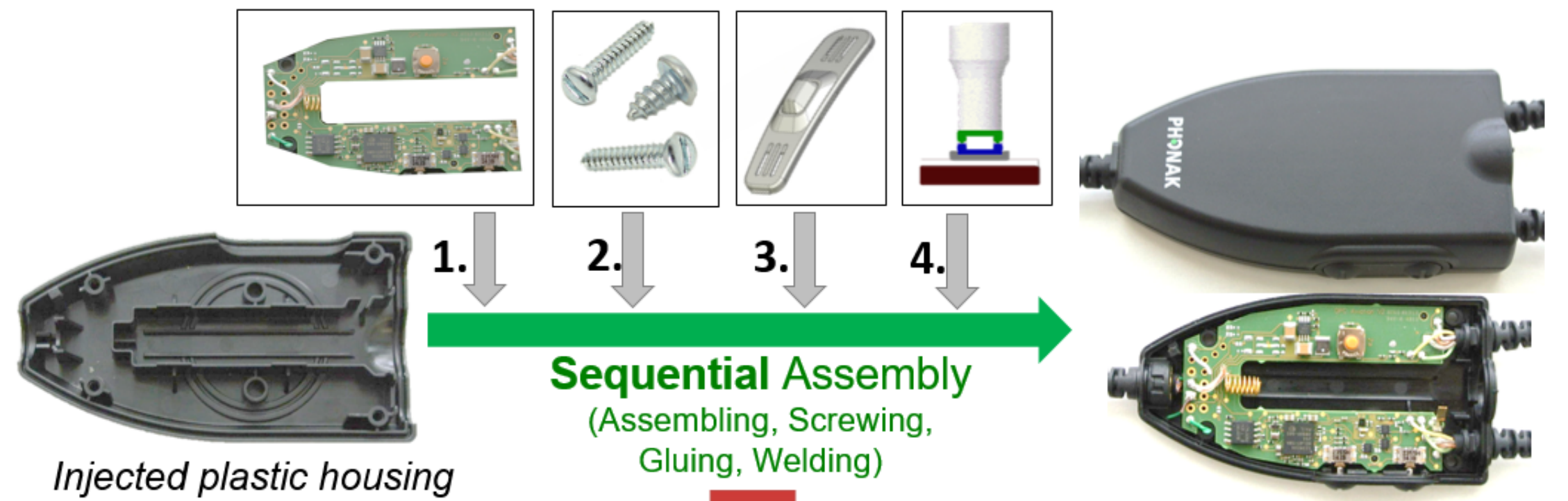
Collaborators: Jalil Badaoui, Yves-Alain Schönenberg | Project timeline: 2016-2017 (18 months) | Budget: 245'000 CHF

GOAL OF THE PROJET AND BACKGROUND

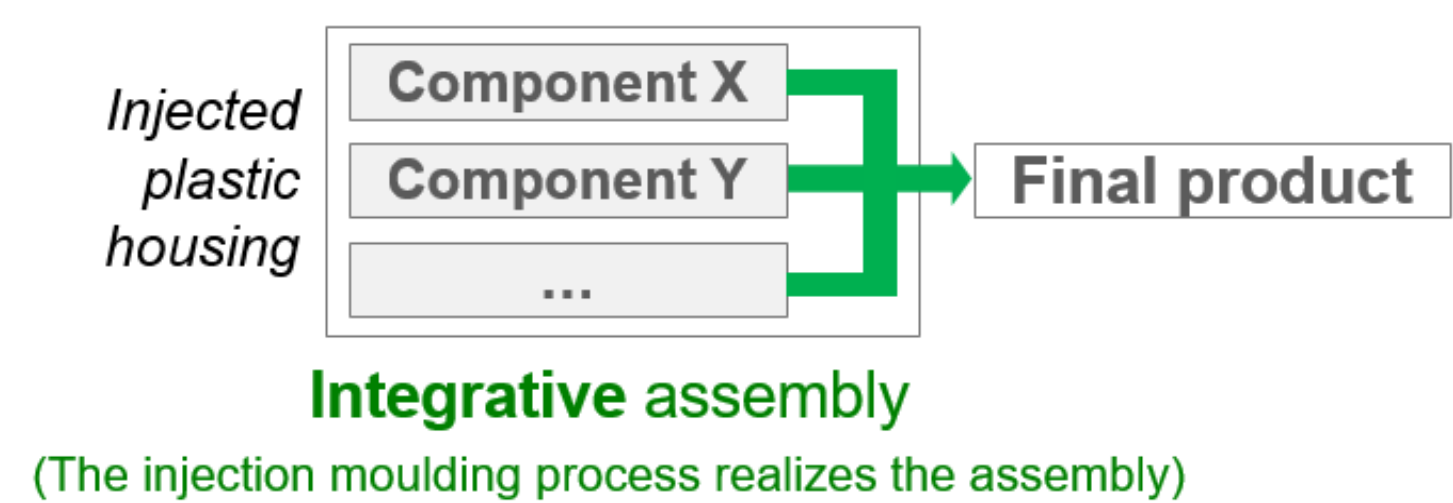
In industry, **function integration**, **miniaturization** and **modularity** are aspects of part design that become ever more important. It is part of a managing strategy to keep **production costs low** and remain **competitive** in a global market.

The **injection molding** process offers an efficient, flexible and economical approach enabling function integration. In fact, the number of production and assembly operations can be significantly reduced. The ASSCO project aims to accomplish exactly that through a **plastic overmoulding process**.

Conventional manufacturing process



Aim of the ASSCO project



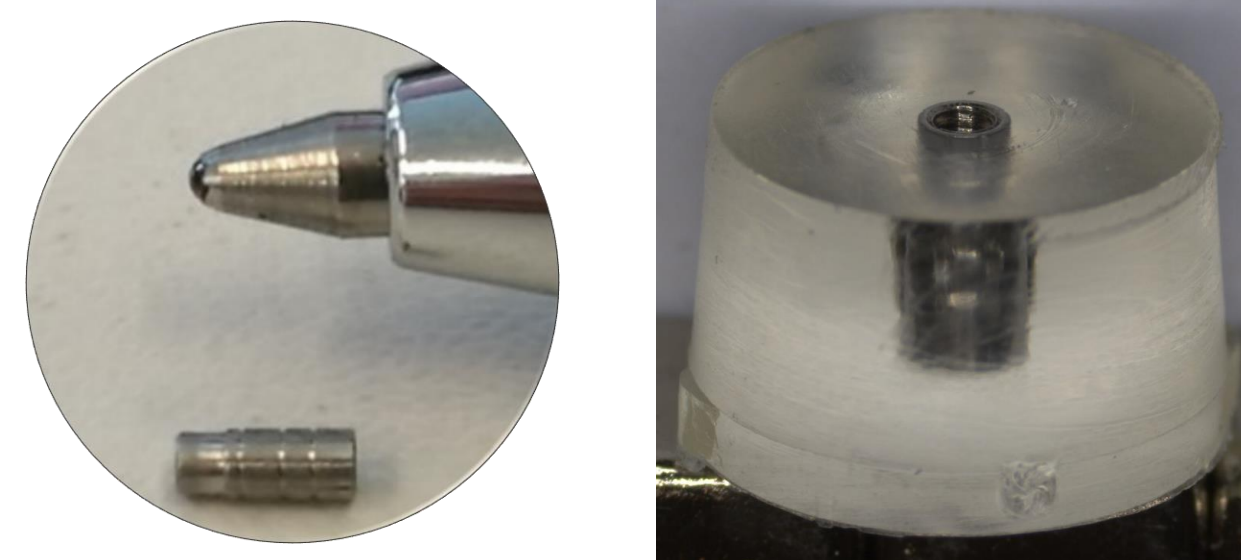
Overmolding of a sensible magnet

- **Tasks:** 3 injection concepts and many different materials have been tested.
- **Key results:** The feasibility has been validated. The binding force also depends on the injection concept. A correlation has been found with an interference fit.



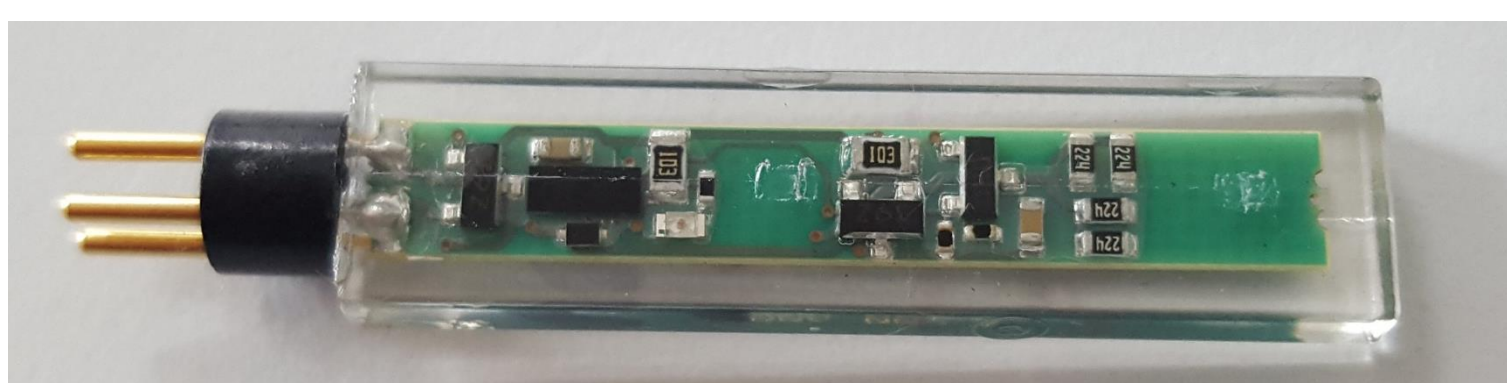
Overmolding of a watchmaking insert

- **Aim:** To demonstrate the feasibility of overmolding a watchmaking insert (Ø1.4mm and length 3.5mm).
- **Tasks:** 3 injection concepts and many different materials have been tested.
- **Key results:** The feasibility and the transmissible torque have been validated.



Overmolding of a PCB

- **Tasks:** Many mold concepts and 7 materials have been tested.
- **Key results:** We can guarantee a functional overmolded PCB if the influencing parameters are well-run. An overmolded PCB is fully resistant to mechanical, thermal or chemical loads.



Overmoulding of a dental insert

- **Aim:** To demonstrate the feasibility of overmoulding a dental insert with Gutta Percha.
- **Tasks:** Many mold concepts and mold improvements have been tested.
- **Key results:** The feasibility has been partially validated and a few promising methods have been found.



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