**PRESS RELEASE**

**Lighter and stronger steel for more sustainable transport: Austrian physicist selected as a finalist at the European Inventor Award 2023**

* **Josef Faderl and his team use galvanized steel sheet in a method to produce stronger, lighter and more sustainable car parts**
* **This method makes steel up to six times stronger than conventional steel**
* **Parts from their steel-hardening process are used by leading car makers to produce more than five million cars per year**

**Munich, 9 May 2023** – Press-hardened steel is used by all major European car manufacturers. It typically accounts for 10 to 20 % of a car’s body in white (BIW) weight. Reducing the weight while making stronger corrosion resistant car parts can result in several environmental advantages in transport, such as using less fuel and reduced CO2-emissions. Josef Faderl, Siegfried Kolnberger, Thomas Kurz and Andreas Sommer, have invented a method for manufacturing car parts from galvanized press-hardened steel. **Faderl and his team are finalists** in the ‘Industry’ category of the European Inventor Award 2023, in recognition of their promising work. They were selected from over 600 candidates for this year’s edition.

**Safer car body parts with a sustainable edge**

Faderl and his team at the Austrian steel and technology group voestalpine developed **a zinc-based coating that can withstand the heat** needed to create strong, thin and lightweight steel components which can be used to build lighter cars. The martensite microstructure, formed by press hardening after heating the steel to about 900 °C, makes the steel **up to six times stronger than conventional steel**. This press-hardened steel can render the car industry more sustainable by allowing manufacturers to produce less fuel-hungry cars. Additionally less steel is produced and therefore CO2-emissions are reduced. Furthermore steel production generates fewer emissions and is cheaper as well as better recyclable than alternative materials such as aluminium or carbon fibre.

Just six years after the first discussion and decision to start this development, the steel, known as phs-ultraform® is produced since 2008 in serial production. More than 30 million phs-ultraform®-parts are produced yearly and assembled in more than five million cars per year.

**Key success factors are creativity, checking and the will to understand**

Josef Faderl joined voestalpine Stahl GmbH 33 years ago, first as a researcher and then leader of a research and development team since 1993. **The company has received several awards**, particularly in the areas of sustainability and global impact. The Austrian physicist recounts how, over 20 years ago, he started working in an emerging technology to increase the resistance strength of the car body, and thus also the level of safety it provided to the driver and passengers.

Faderl and his team developed the method to work in practice by introducing zinc-coated press-hardened steel parts to meet industry demand. *“Our customers told us they wanted to have a zinc-based coating because we know that, from a corrosion protection point of view, it's a better solution in comparison to a passive system like the hot-dip aluminising or much better than uncoated material*”, Faderl says.

When others warned zinc would not work, Faderl and his team **persisted and continued their tests**. He underlines his belief in testing every theory despite any initial doubts, *“The most important thing is to be as critical as possible. If you think something doesn’t work, prove it really doesn’t… Creativity and checking as well as looking for the mechanisms behind are our major success factors.”*

Faderl and his team have been named among three finalists in the ‘Industry’ category of this year’s European Inventor Award, recognising the work of inventors of outstanding and commercially successful technologies patented by large European companies**. The winners of the 2023 edition will be announced at a hybrid ceremony on 4 July 2023** in Valencia (Spain). This ceremony will be broadcast online here and open to the public.

Find more information about the invention’s impact, the technology and the inventors’ stories here.

**Media contacts European Patent Office**

**Luis Berenguer Giménez**
Principal Director Communication / EPO spokesperson

**EPO press desk**

press@epo.org
Tel.: +49 89 2399-1833

**About the European Inventor Award**

The European Inventor Award is one of Europe's most prestigious innovation prizes. Launched by the EPO in 2006, the award honours individuals and teams, who have come up with solutions to some of the biggest challenges of our time. The finalists and winners are selected by an independent jury comprising former Award finalists. Together, they examine the proposals for their contribution towards technical progress, social and sustainable development, and economic prosperity. All inventors must have been granted a European patent for their invention. Read more here on the various categories, prizes, selection criteria and livestream ceremony to be held on 4 July 2023.

**About the EPO**

With 6,300 staff members, the European Patent Office (EPO) is one of the largest public service institutions in Europe. Headquartered in Munich with offices in Berlin, Brussels, The Hague and Vienna, the EPO was founded with the aim of strengthening co-operation on patents in Europe. Through the EPO's centralised patent granting procedure, inventors are able to obtain high-quality patent protection in up to 44 countries, covering a market of some 700 million people. The EPO is also the world's leading authority in patent information and patent searching.