

INFORMATION ABOUT IDEA

We use mathematics and AI to digitize the least digitized industry (building materials). Our tool simulates the mixing process and independently suggests optimized concrete mixtures. We reduce the time and cost for developing new concrete mixtures.

PRODUCT / SERVICE

Concrete is the most important building material in the world (10^{10} tons are used annually). The most important component of concrete is cement. Every year about $2 \cdot 10^9$ tons of cement are produced. That causes about 10-15% of the CO₂ emissions emitted by humanity. Finding new better concrete mixtures is time consuming and expensive.

We combine mathematical optimization and AI in a software tool that virtually simulates promising new concrete mixes. This makes innovation cycles shorter and cheaper, and reduces the number of laboratory experiments significantly.

Our new optimization approach results in better reproducible concrete mixes of higher quality, whose properties have a high stability. When finished, the tool automatically suggests new and better mixtures through self-adaptive algorithms.

Our plan is to develop B2B software to optimize concrete mixing, including a growing database.

Another goal is to make our software the standard for testing new concrete mixes for the use on the market. This process is currently very expensive because all mixtures need to be tested in laboratories before they are approved.

Novelty and USP:

We develop the first database for the optimization of concrete mixing based on self-developed algorithms. We use machine learning and other AI tools to create a self-learning system. This allows us to create software that alters the way we find new types of concrete.

One of our USPs and core strengths is our experienced team of scientists that has been developing and selling optimization software products for over 10 years.

Customer benefits:

- 1) Digitization of the material concrete - more possibilities in the application through increased safety through simulation.
- 2) Risk-free and cost-effective way to start or intensify material research.
- 3) Low costs due to reduced demand for CO₂ certificates and cement.
- 4) Higher margins through new and more efficient concrete mixes.
- 5) Lower research costs per mix cycle.
- 6) Possibilities to design new concrete mixtures (eg. with desert sand, plastic, etc.)

Contact:

Mag. Franz Haller

+43 664 516 35 60

Franz.haller@mixteresting.com