



AI-IHUB

The banner for the 1ST International Conference on The Digital Transformation in Steel & Mining Industry 2023 features a dark blue background with a glowing blue and white graphic of a globe and circuitry on the right. The text "1ST International Conference on The Digital Transformation in Steel & Mining Industry 2023" is written in white and yellow. Below the main text, the Persian text "اولین همایش بین المللی تحول دیجیتال در صنعت فولاد، معدن و صنایع معدنی" is written in white. The letters "DT" are prominently displayed in yellow on the right side of the banner.

1ST International
Conference on The
Digital Transformation
in Steel & Mining Industry 2023 **DT**

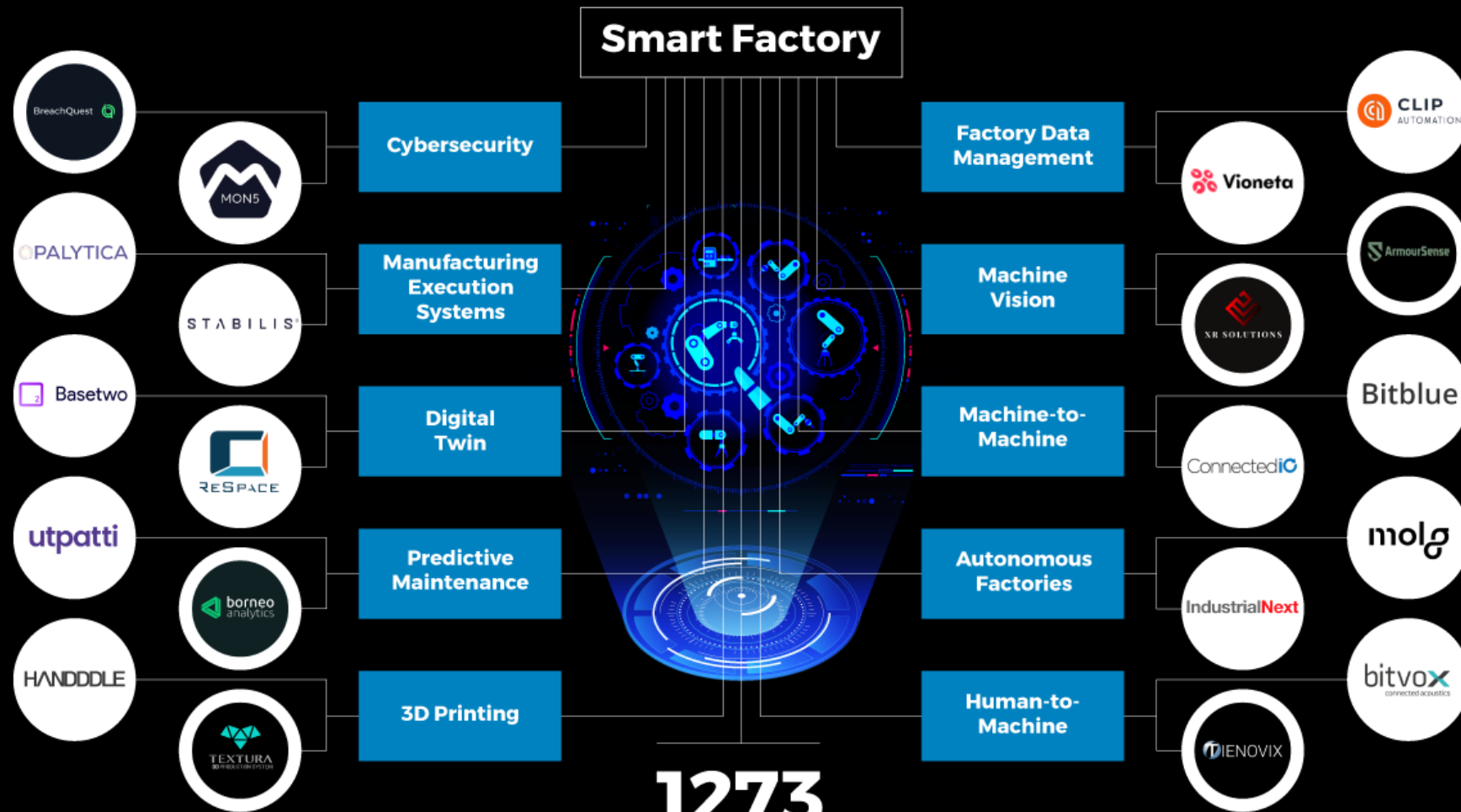
اولین همایش بین المللی تحول دیجیتال در صنعت فولاد، معدن و صنایع معدنی

Artificial Intelligence(AI)

Roles in

Steel industry

Top 10 Smart Factory Trends in 2023

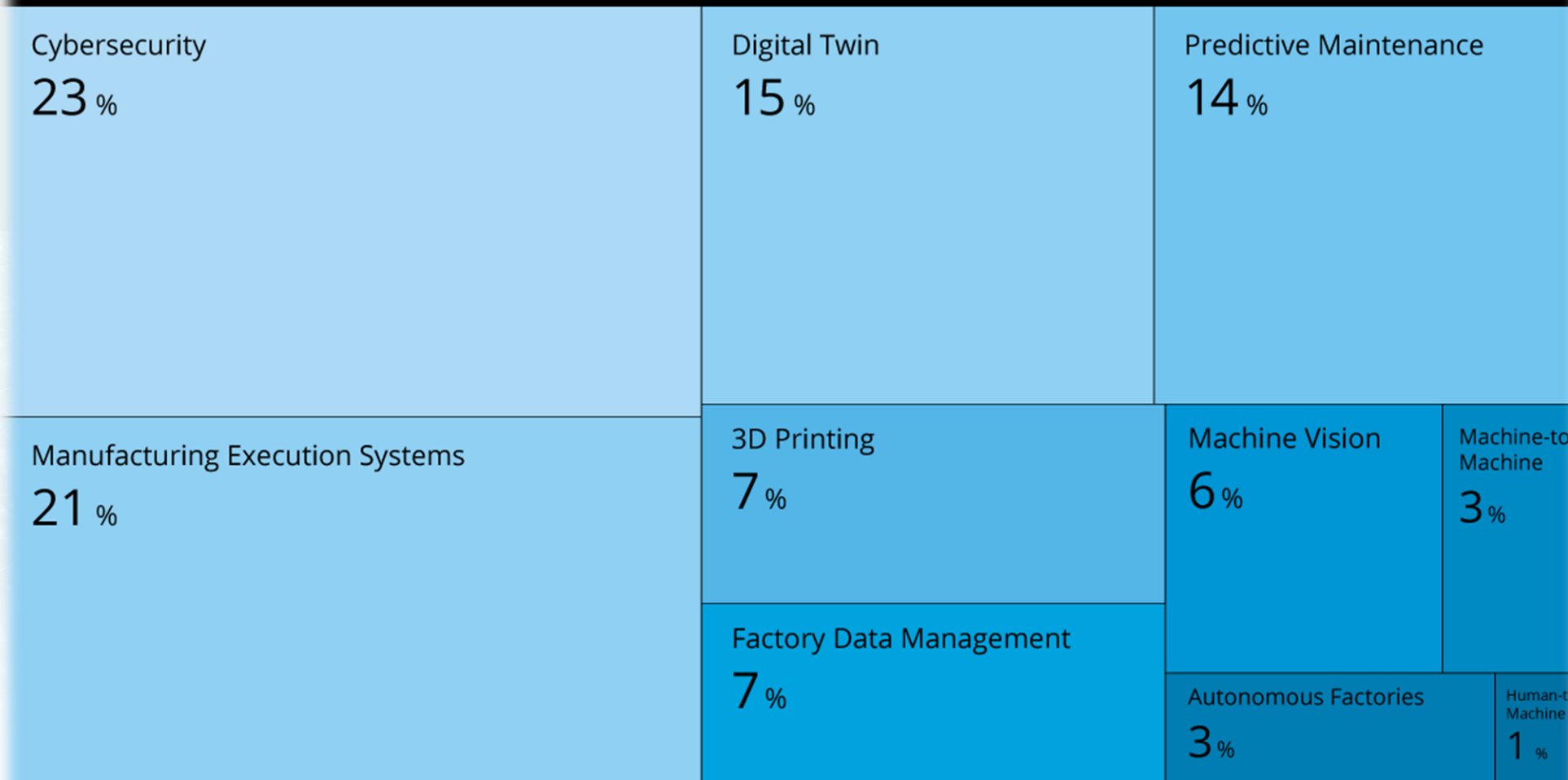


1273

Startups & emerging companies analyzed



Impact of Top 10 Smart Factory Trends



This tree map illustrates the top 10 innovation trends & their impact on Smart Factory



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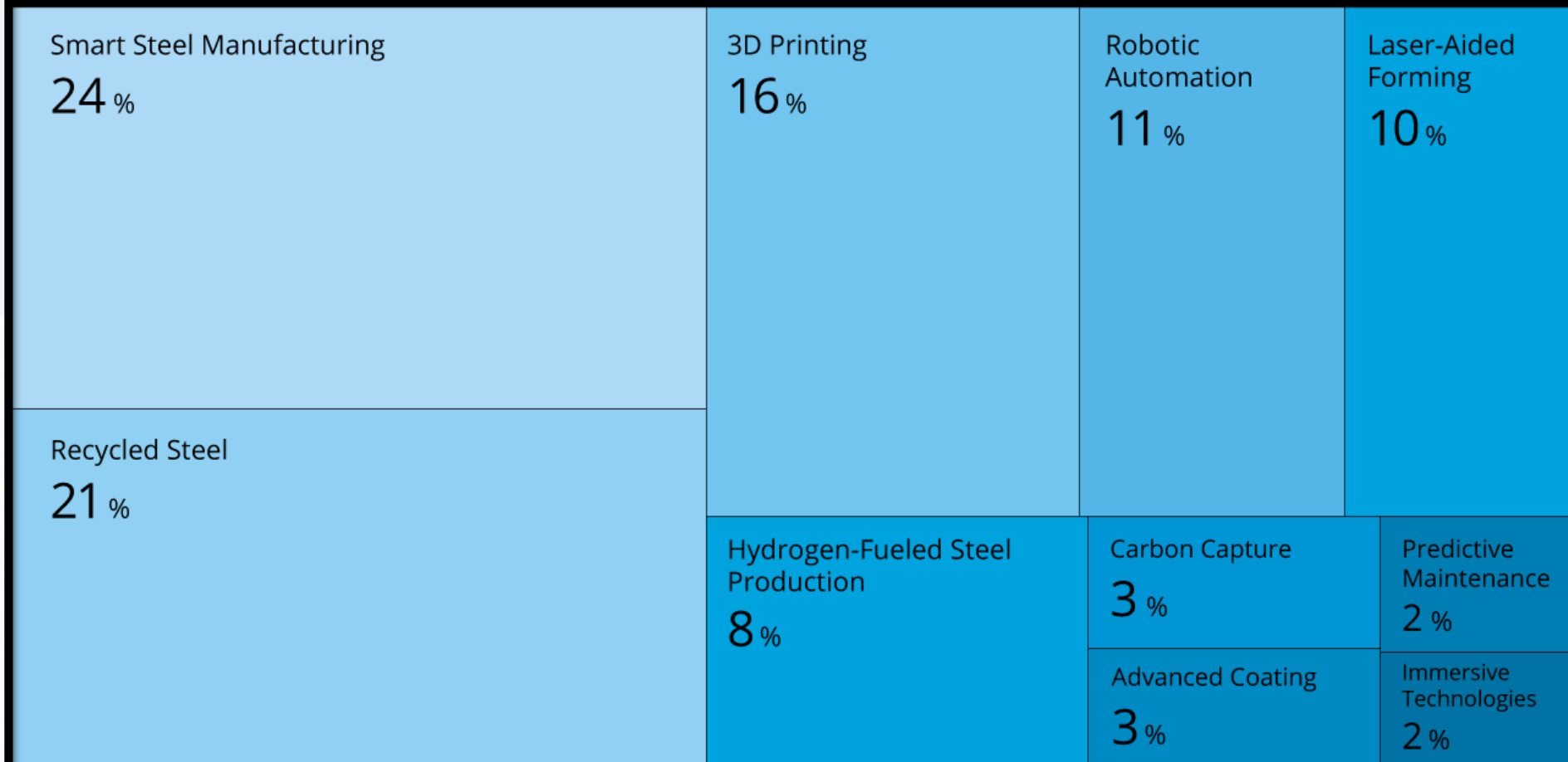
Top 10 Technology Trends in the Steel Industry



670

Startups & emerging companies analyzed

Impact of Top 10 Steel Industry Trends



This tree map illustrates the top 10 innovation trends & their impact on Steel Industry

Long-Term Success with AI Requires a Three-Step Transformation



Source: BCG

Companies See **Three** Common Challenges During the Early Stages of AI Implementation



Inability to trace individual parts and pieces across the end-to-end production process



Data on critical variables not collected or stored



Cultural resistance due to perceptions of AI as a challenge to workers

Source: BCG

AI Technologies Use Cases in **Steel** Industry

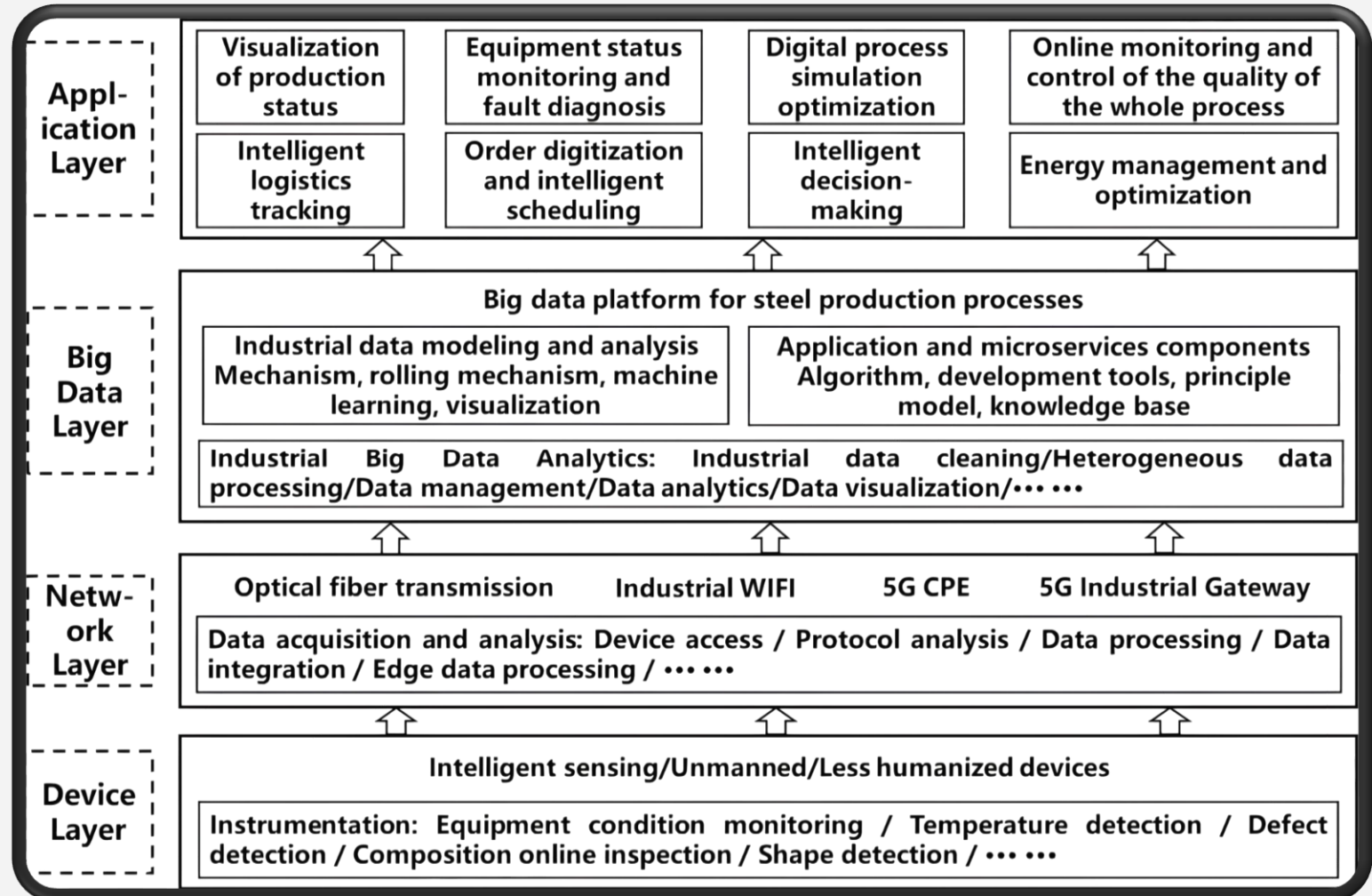
Main intelligent manufacturing project in steel industry of China

Source:doi.org/10.3390/s22218194

Project Name	Main Production Lines	Enterprise	Time/Year
Digital metallurgical mine	Mine	Angang Mining Company	2015
Intelligent workshop for hot rolling	Rolling	Baosteel	2015
Intelligent factory for iron and steel enterprise	Steelmaking and rolling	Hesteel	2016
Intelligent factory for silicon steel in the cold rolling process	Rolling	Shougang	2016
Intelligent manufacturing of high-precision special steel wire	Rolling	Shengtong Steel	2017
Digital workshop for cold rolling	Rolling	Baosteel	2017
Digital workshop for stainless steel in cold continuous rolling	Rolling	Taisteel	2017
Intelligent manufacturing in the whole process of high-end wire rod	Steelmaking and rolling	ShaSteel	2017
Intelligent factory for seamless steel pipe	Pipe Rolling	Hengyang Valin Steel Pipe	2018
Intelligent manufacturing for steel plate	Plate Rolling	Nangang	2018
Intelligent manufacturing for steel thick plate	Plate Rolling	Angang Steel	2018

AI Technologies Use Cases in Steel Industry

Framework for intelligent manufacturing in China's steel industry





Steel Bar Counting and Separation System

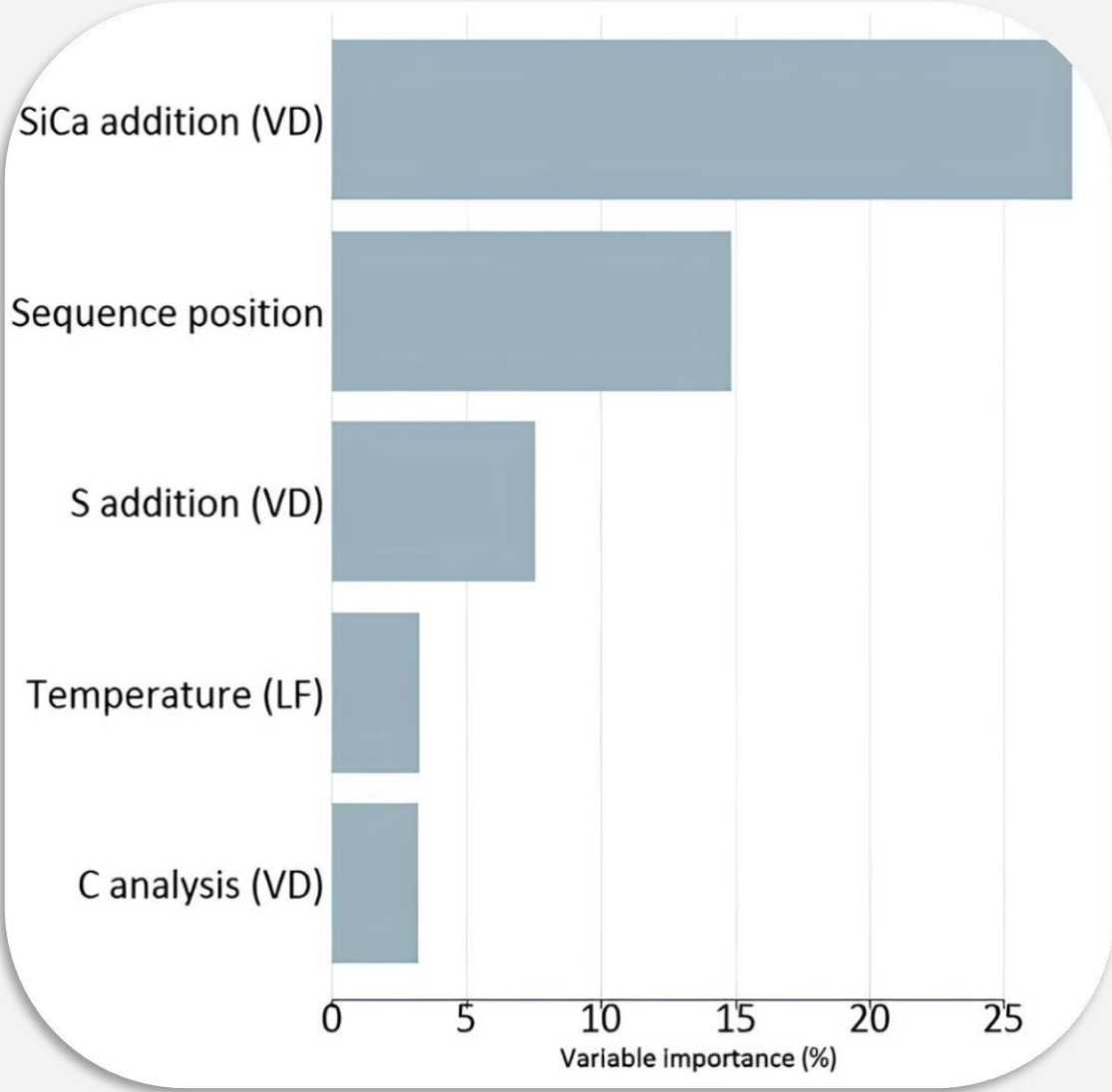
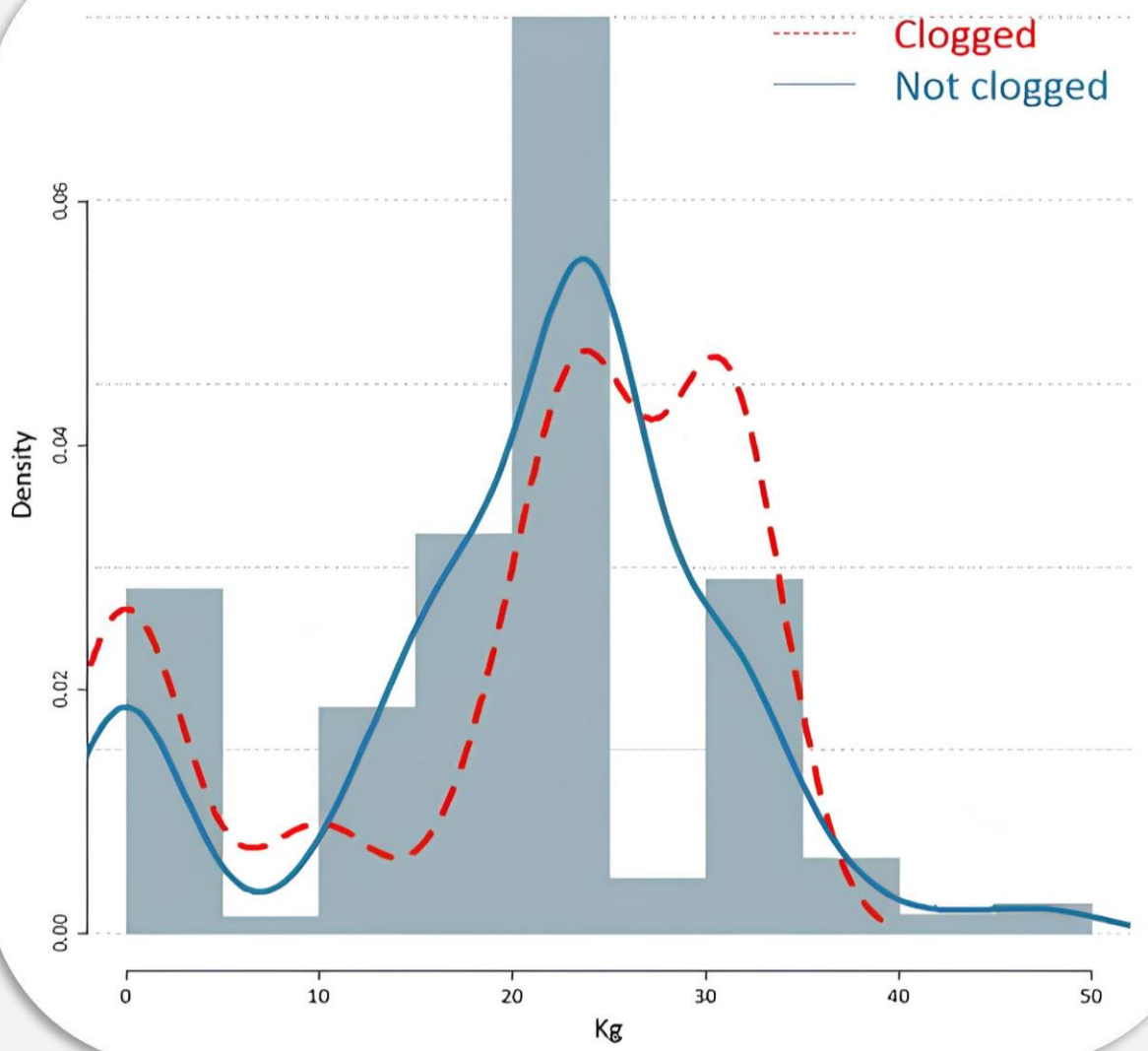




AI Technologies Use Cases in Steel Industry

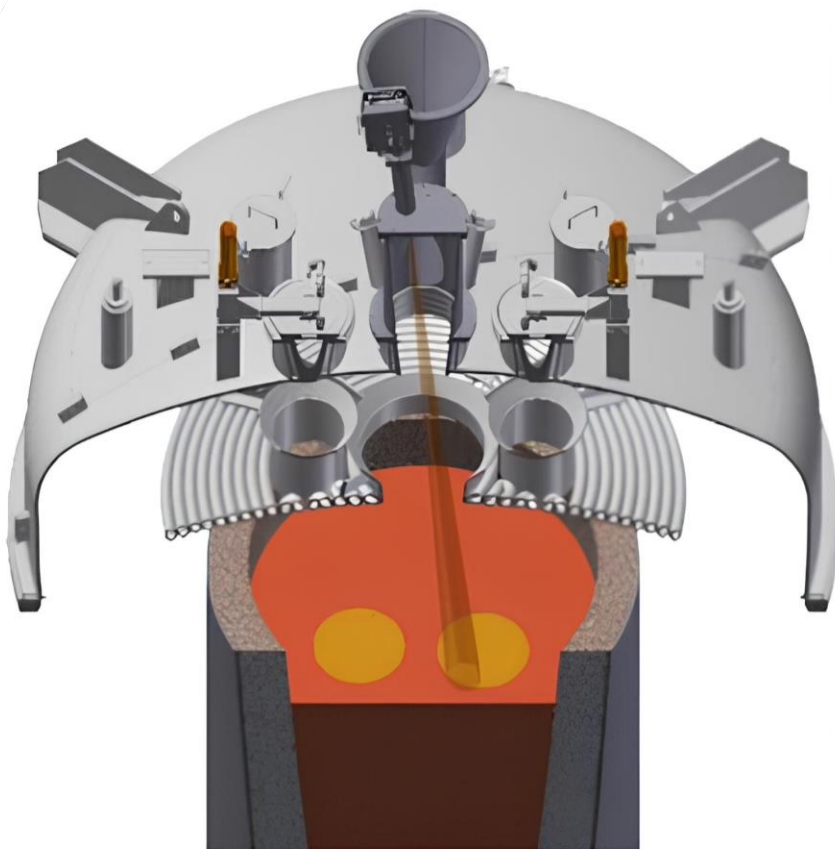
QClog

SiCa Addition in VD - seq. pos.: Longer seq.



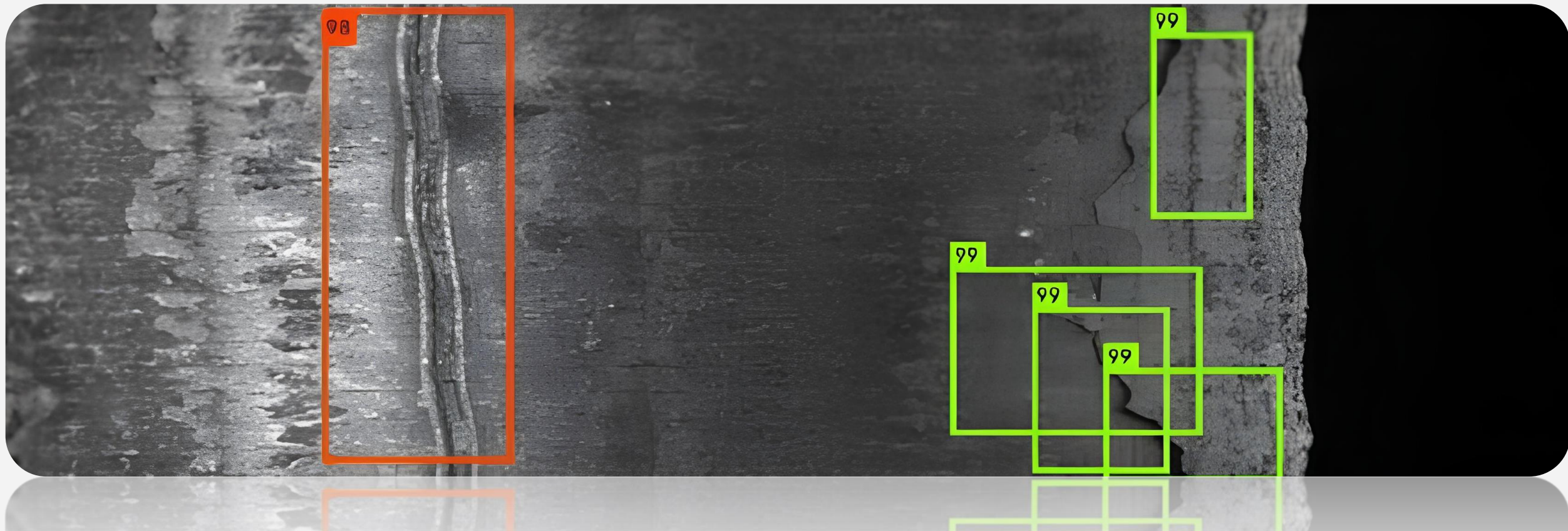
AI Technologies Use Cases in **Steel** Industry

QTemp-VD



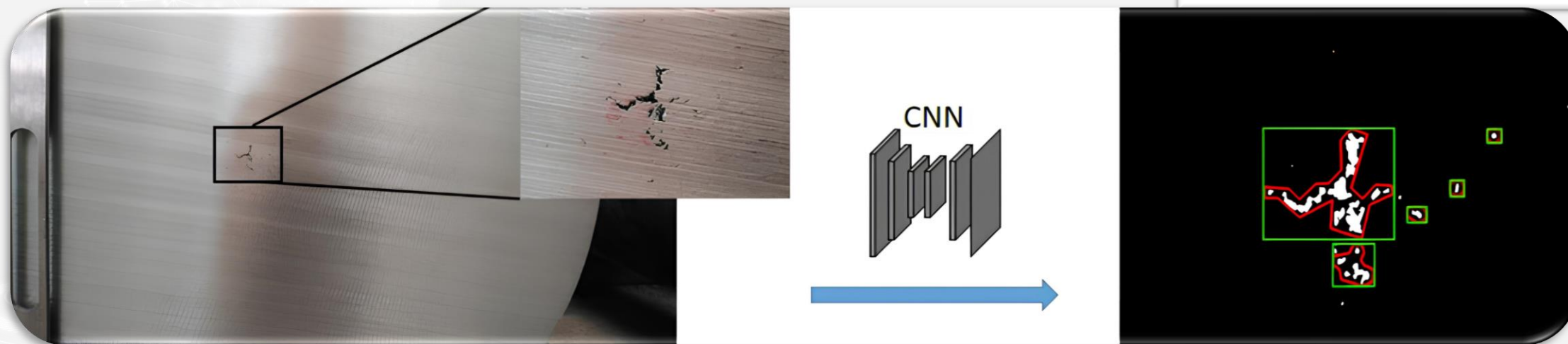
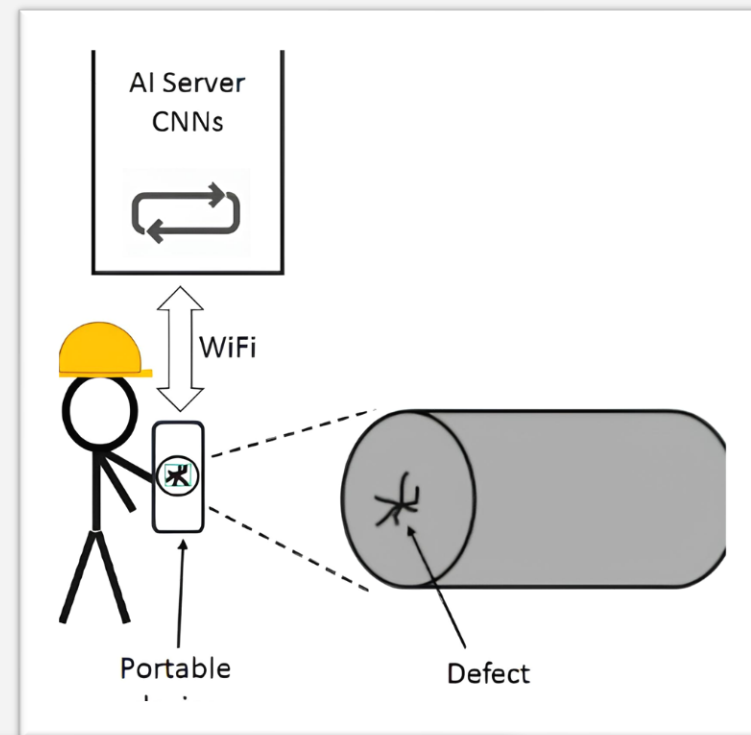
AI Technologies Use Cases in **Steel** Industry

Defect Detection



AI Technologies Use Cases in **Steel** Industry

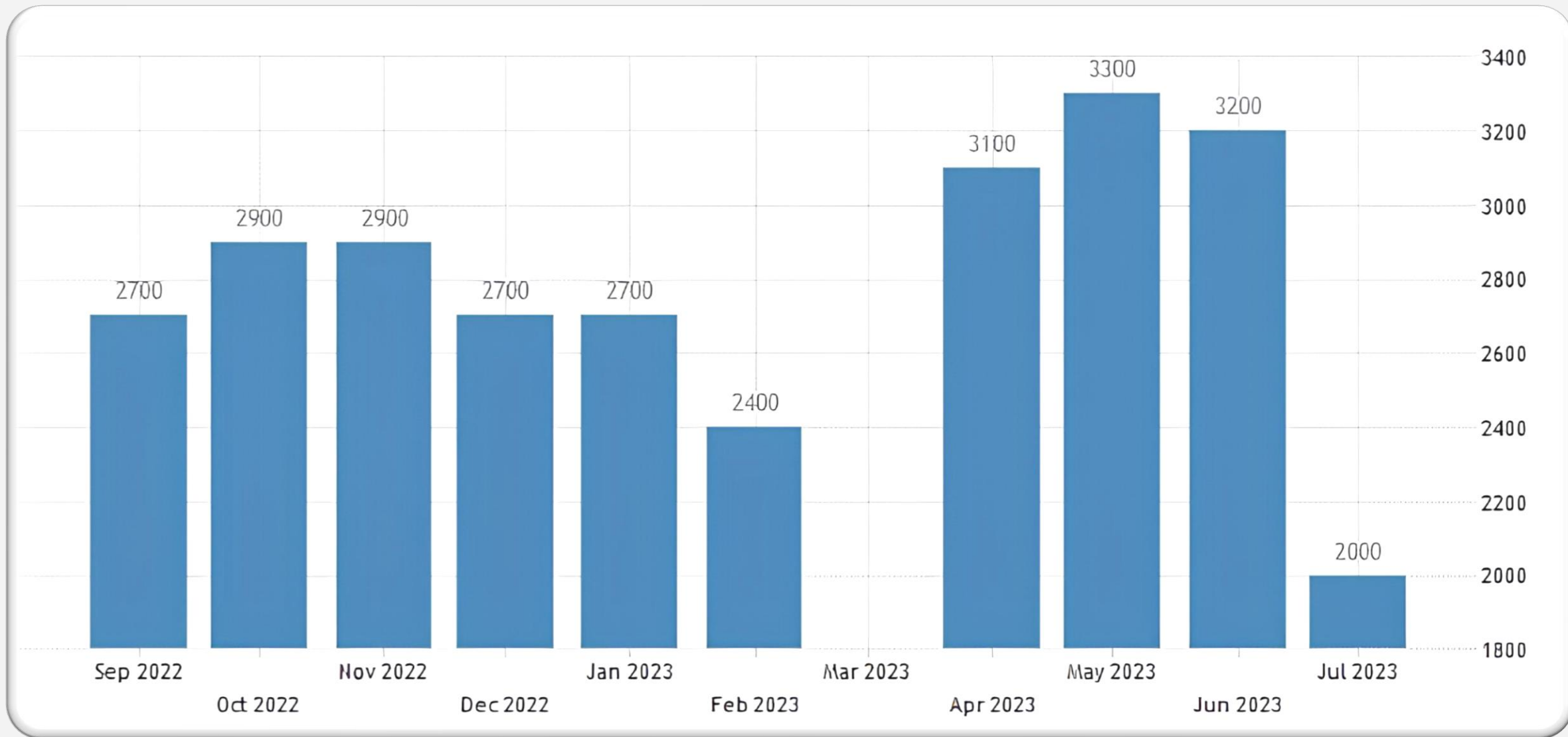
Defect Detection





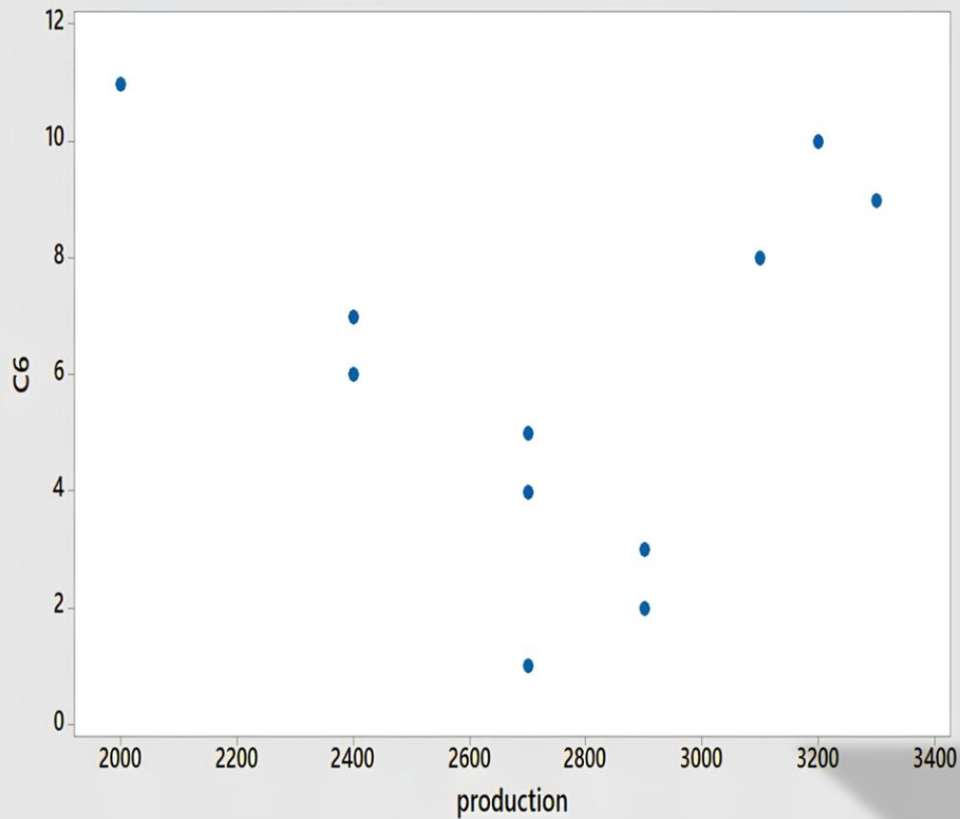
Forecasting the Future of Iranian Steel Production Using a Neural Network Model (Self-adaptive Wavelet)

Source: trading economics

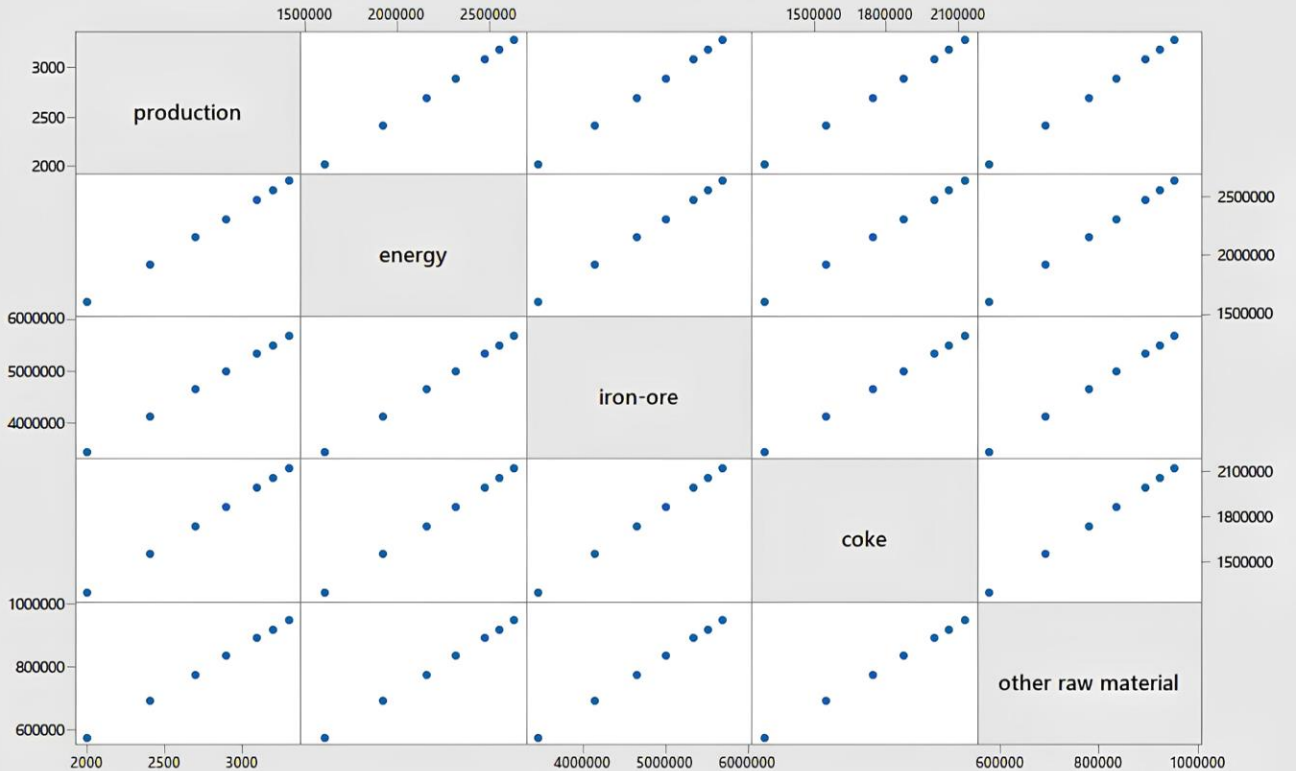


Forecasting the Future of Iranian Steel Production Using a Neural Network Model (Self-adaptive Wavelet)

Scatterplot of C6 vs production



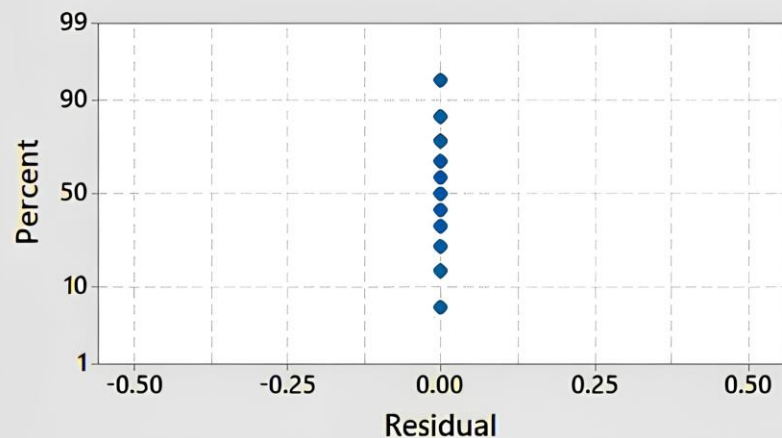
Matrix Plot of production, energy, iron-ore, coke, other raw material



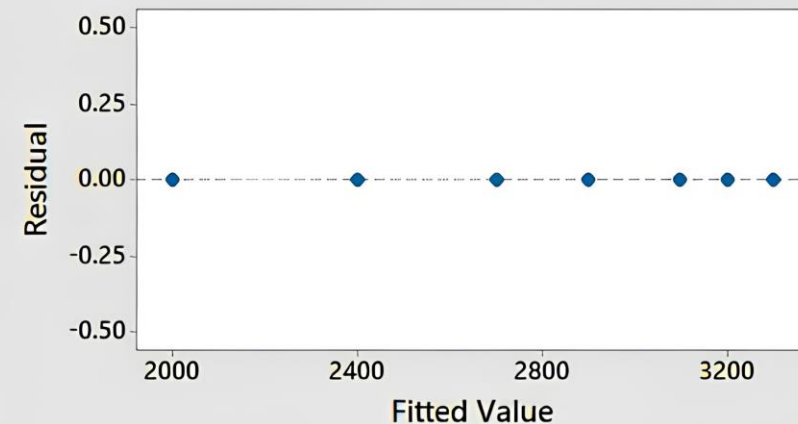
Forecasting the Future of Iranian Steel Production Using a Neural Network Model (Self-adaptive Wavelet)

Residual Plots for production

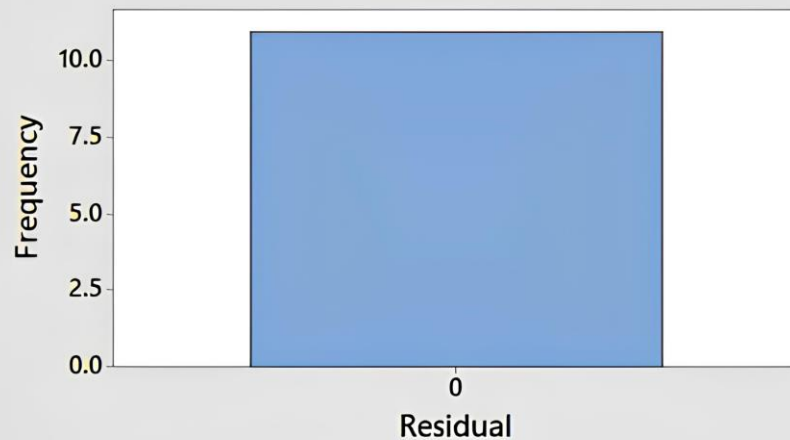
Normal Probability Plot



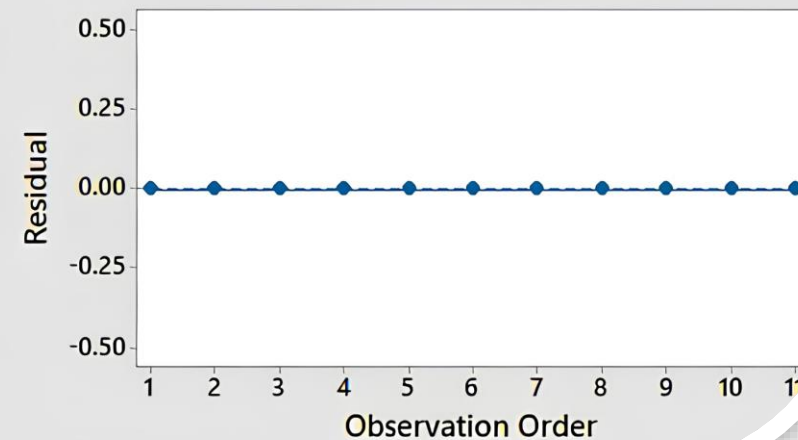
Versus Fits



Histogram



Versus Order



Forecasting the Future of Iranian Steel Production Using a Neural Network Model (Self-adaptive Wavelet)



- **There is insufficient evidence to suggest a change in the production process of around 2800 thousand tons of steel per in Iran's steel industry. It is anticipated that this figure will continue to rise in the upcoming month months, with the focus remaining on the quantity of steel production.**



INDUSTRY 4.0



INDUSTRY 5.0



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EVENTS



IAI VIRTUAL
TRAINING



IAI MEDIA



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BUSINESS
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