Bachelor / Master Thesis

Topic: **Directly reduced iron – a cleaner approach for steel production**

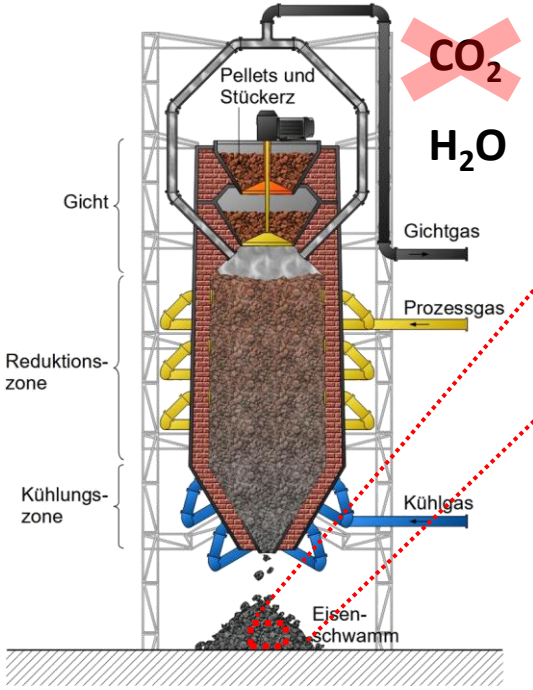
Description: Direct reduction of iron ore is a promising „green“ alternative to produce iron for modern steel industry. Instead of CO_2, H_2O is produced as a side product, which makes this process highly attractive for sustainable steel production. The product of this process is a highly porous Fe material, which requires careful analysis to understand the structure and materials properties with respect to further applications and to optimize the whole production routine. For this purpose, X-ray nanotomography (Nano-CT) is highly suitable, providing access to the three-dimensional (3D) pore space and contributing quantitative data on parameters like pore size distribution or tortuosity. As an ongoing research project in collaboration with the Max Planck Institut für Eisenforschung Düsseldorf, we require assistance from a highly motivated student, who is willing to explore this fascinating topic together with us (Bachelor or Master thesis). For a entertaining introduction into the topic, refer to the Youtube Channel „Breaking Lab“ and watch the corresponding video (use QR code).

Start: 04/22

Supervisor: Dr. Janis Wirth (janis.wirth@fau.de, +49 9131 85-70380)

Group leader: Dr. Benjamin Apeleo-Zubiri (benjamin.apeleo.zubiri@fau.de)

Professor: Prof. Dr. Erdmann Spiecker (erdmann.spiecker@fau.de)



https://www.tec-science.com