

## Opening of the new hall 4 building and inauguration of the quality-assured, digital additive manufacturing chain

On Thursday, April 11, 2024, Neue Materialien Fürth GmbH (NMF) was able to open the fourth NMF technology hall with system technology after almost three years of planning and construction. The inauguration of hall 4 and the quality-assured, digital additive manufacturing chain for powder/pellet-based metal and ceramic components built therein was carried out by the State Secretary in the Bavarian Ministry of Economic Affairs, Regional Development and Energy, Mr. Tobias Gotthardt. After the greetings and a keynote speech, all guests were able to take a tour to find out about the potential and areas of application of the new manufacturing technology. The Free State of Bavaria has financially supported the research and production site in Fürth with € 3 million. Mr. Gotthardt was just as enthusiastic about the goal-oriented, future-relevant research and development work as the economic officer of the city of Fürth, Horst Müller, who has accompanied NMF's work from the beginning.

The following day, the new hall 4 building with the production chain for pellet-based 3D printing was presented to the first partners and users from industry and system manufacturers. The new production chain enables the production of geometrically complicated metal and ceramic components from tailor-made feedstocks, which are manufactured using a mixer and a shearing roller. The shaping is then carried out using 3D printing or injection molding. The so-called green body must subsequently be debinded and sintered in order to get to the final component. For the new additive manufacturing chain, a comprehensive and automated quality and data assurance concept is to be built that enables the connection with the individual machines and shows the influences and interactions of the process steps on each other. This will lead to a digital twin of the whole process chain following the strategy „first part right“. For this purpose, the quality characteristics and associated parameters of the semi-finished products and components are determined and all further steps in the process chain are designed accordingly. A new machining center was also put into operation for post-processing.



Figure 1: State Secretary Tobias Gotthardt with the first demonstrator part produced (left) and presentation of the new system technology on the user day with representatives from industry (right)