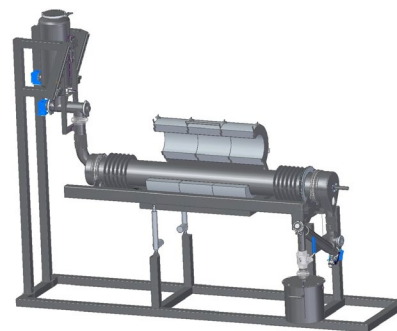


## IMPACT OF TEMPERATURE AND TECHNOLOGY ON BIOCHAR PROPERTIES FROM DIFFERENT AGRICULTURAL RESIDUES

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Over the last decades biochar got established as a promising resource candidate for a lot of different fields of industry and agriculture. And while there are already some biochar containing products on the market, the technology still needs more research to be implemented on a large scale. One of the more recent developments is the demand for tailor-made biochar. As different industries and applications of biochar have different requirements for the biochar quality, the ability to produce biochar with the desired properties is a vital step towards its application on a grand scale. And while there are many factors influencing biochar properties, like type of feedstock or the presence of additives, the present work's focus is the influence of technology and temperature on biochar properties. For this, two technologies, one batch and one continuous reactor, were chosen and the produced biochars were compared. Four different agricultural residues were pyrolyzed at 500 and 700 °C in a muffle furnace and a lab-scale rotary kiln (Figure 1). The produced chars were then characterized in terms of physicochemical properties (e.g. pH, specific surface area, cation exchange capacity) and chemical compositions (e.g. CHN, Ash, Volatiles, Trace elements, PAH). Based on these analyses results, differences and similarities of the produced biochars were identified and used to assess the technology- and process-related impact on particular biochar characteristics.



*Figure 1 – Schematic depiction of the used rotary kiln*