Physikalisches Institut
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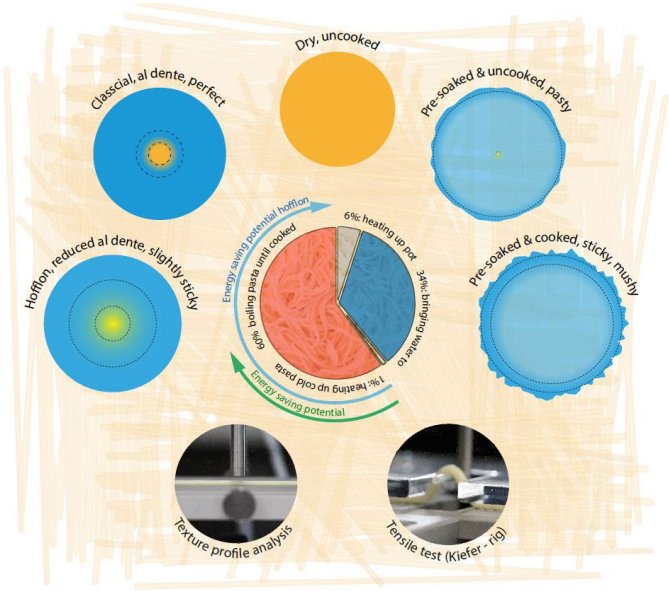
PHYSIKALISCHES KOLLOQUIUM

AM 21. JULI 2025 UM 16 UHR C.T.
IM GROßEN HÖRSAAL



PHYSICS OF PASTA COOKING

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Physics Nobel laureate Giorgio Parisi recently proposed a novel approach to cooking pasta that is more energy-efficient: Bring the water to a boil, add the pasta, cover the pot with a lid, and turn off the heat source. This heat-off-lid-on (hofflon) method saves energy. Other suggestions recommend soaking dried pasta in cold water to shorten the cooking process. Experiments demonstrated significant variations in mechanical properties, adhesiveness, and cohesion. The hofflon method requires a longer cooking time due to the gradual decline in temperature. The process of soaking increases the water content of the pasta prior to cooking, which subsequently affects the behaviour of proteins and starch when heated. These effects influence the manner in which proteins undergo alteration, the formation of cross-links, and the gelatinization of starch. Pasta prepared using the hofflon method exhibits reduced cohesion and softness, resulting in a texture that is softer and more mushy than that of al dente pasta. Pre-soaked samples display increased stickiness and a mushy texture when compared to pasta prepared using the classic method and Hofflon pasta. The results of this study indicate the promise of developing straightforward models to illuminate the unique roles of proteins and starch during the structural transformation.