

# Effects of Preheating Temperature on Bubbling

For thermally unstable materials, higher preheating temperatures can reduce concentricity due to the formation of more bubbles. As shown in Figure 1, increasing the preheating temperature leads to a significant increase in total bubble size, while concentricity decreases correspondingly. Figure 2 further illustrates a clear negative correlation between total bubble size and concentricity, as the total bubble size increases, concentricity drops. This indicates that bubble formation, which is promoted by higher preheating temperatures, directly impacts the uniformity and quality of the material.

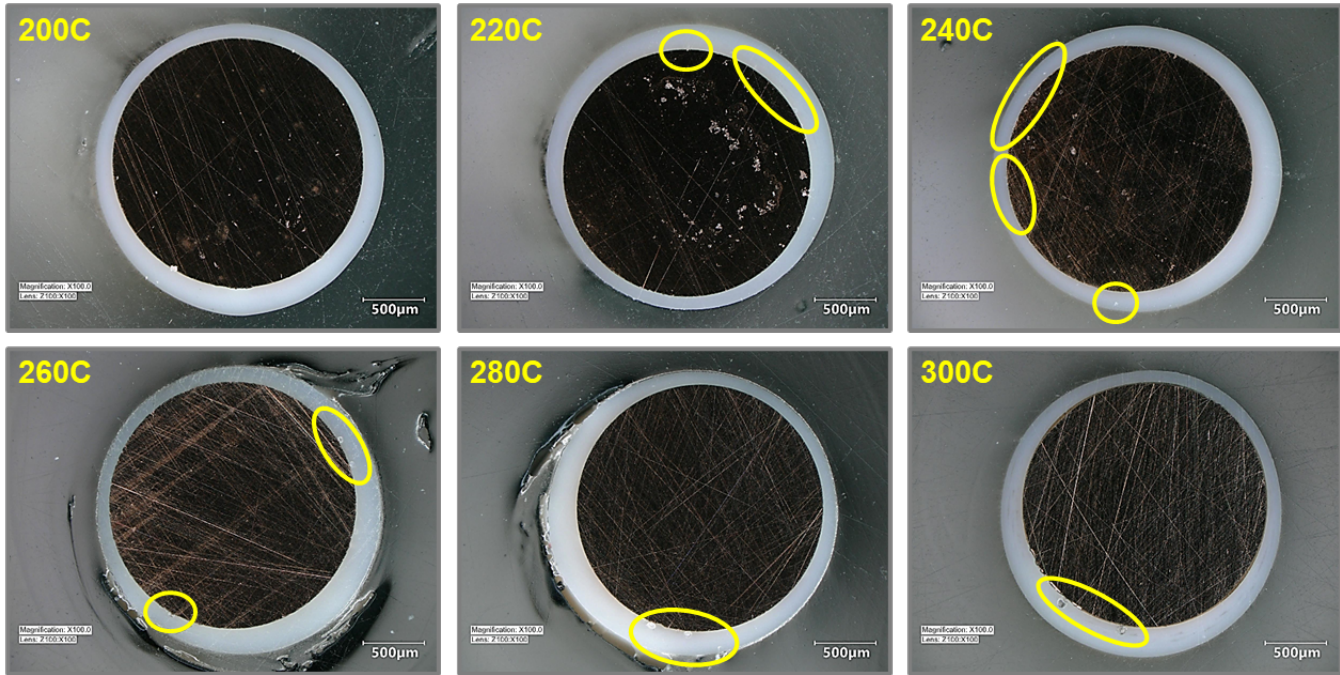


Figure 1. Cross-sectional images of samples processed at different preheating temperatures (200, 220, 240, 260, 280, and 300C). As the preheating temperature increases, the number and size of bubbles (highlighted in yellow) increase, leading to a reduction in concentricity and overall sample uniformity.

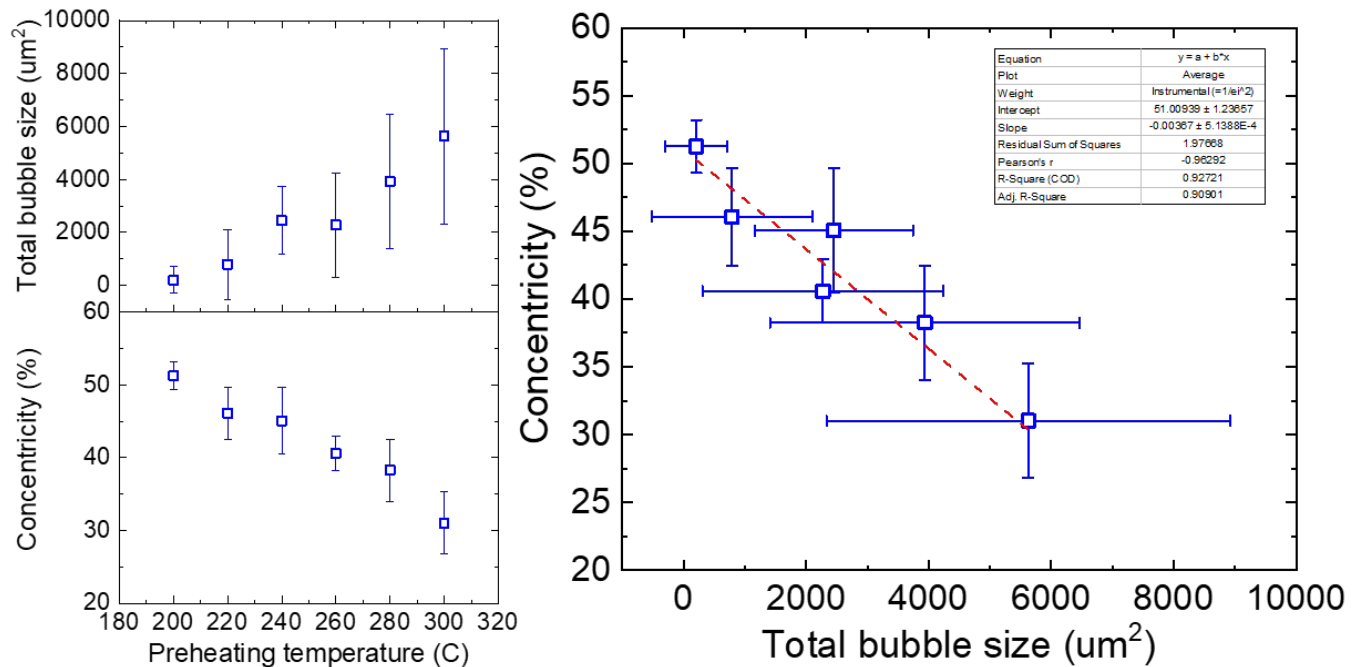


Figure 2. Correlation between total bubble size and concentricity. The plot shows a clear negative relationship as the total bubble size increases, concentricity decreases.