



Speaker 5



Caroline Norrish

## Investigating different rapid alloy prototyping approaches to develop alloys to allow for higher scrap steel content

**SPEAKER / LEAD AUTHOR:**  
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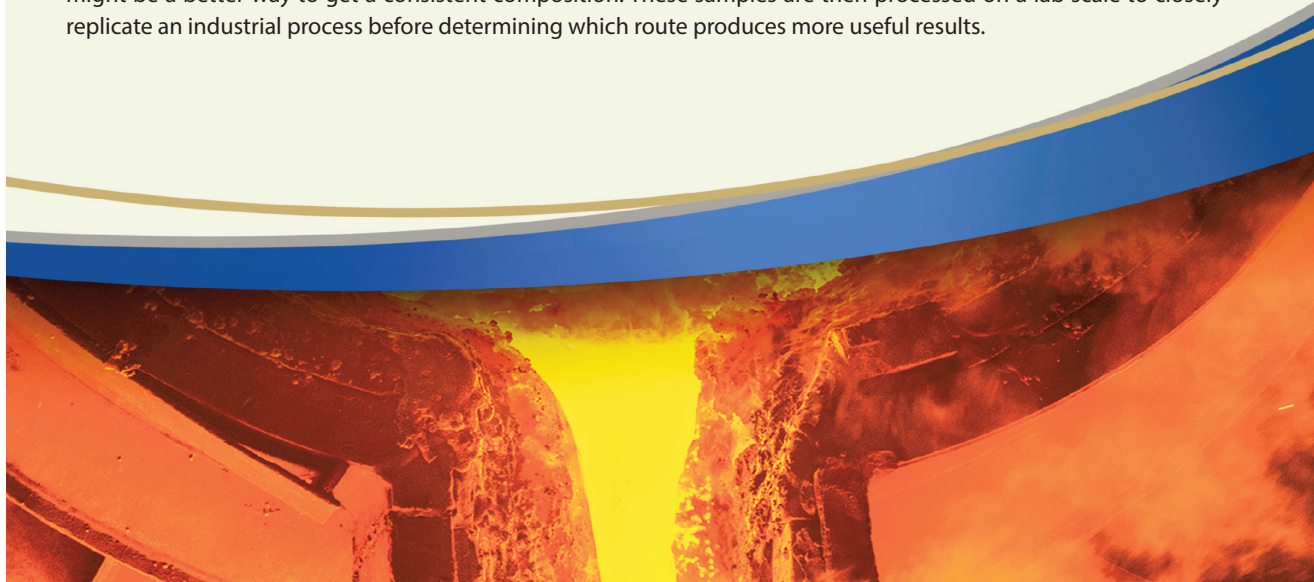
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**ABSTRACT:**

Recycling old steel presents a challenge because of the unwanted residual elements introduced into new steel via the scrap additions. Rapid alloy prototyping presents a way to quickly investigate the effects of varying residual levels in newly made steel. This presentation will discuss three different routes used to investigate this topic focussing on an automotive steel with residual additions.

Initial tests were carried out using 20g synthetic, simplified versions of existing steel grades which lead to small samples with varying composition consistency. The second method also uses synthetic steel but scaled up to 140g to allow for more repeats from each cast. The final route involves remelting industrial steel on the 140g scale to investigate if this might be a better way to get a consistent composition. These samples are then processed on a lab scale to closely replicate an industrial process before determining which route produces more useful results.



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