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Title: Effect of online rapid cooling on microstructure and mechanical properties of friction stir welded medium carbon steel

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The following are the highlights of the paper:

- Effect of online rapid cooling via liquid CO₂ during FSW of medium carbon steel is studied
- Comparative results are studied between rapid and natural coolings welds
- EBSD and SEM techniques are used to characterize the microstructures of different weld regions
- Hardness, tensile and charpy tests are used to characterize the mechanical properties of the welds

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