



Interdisciplinary collaboration between engineering, mathematics and science

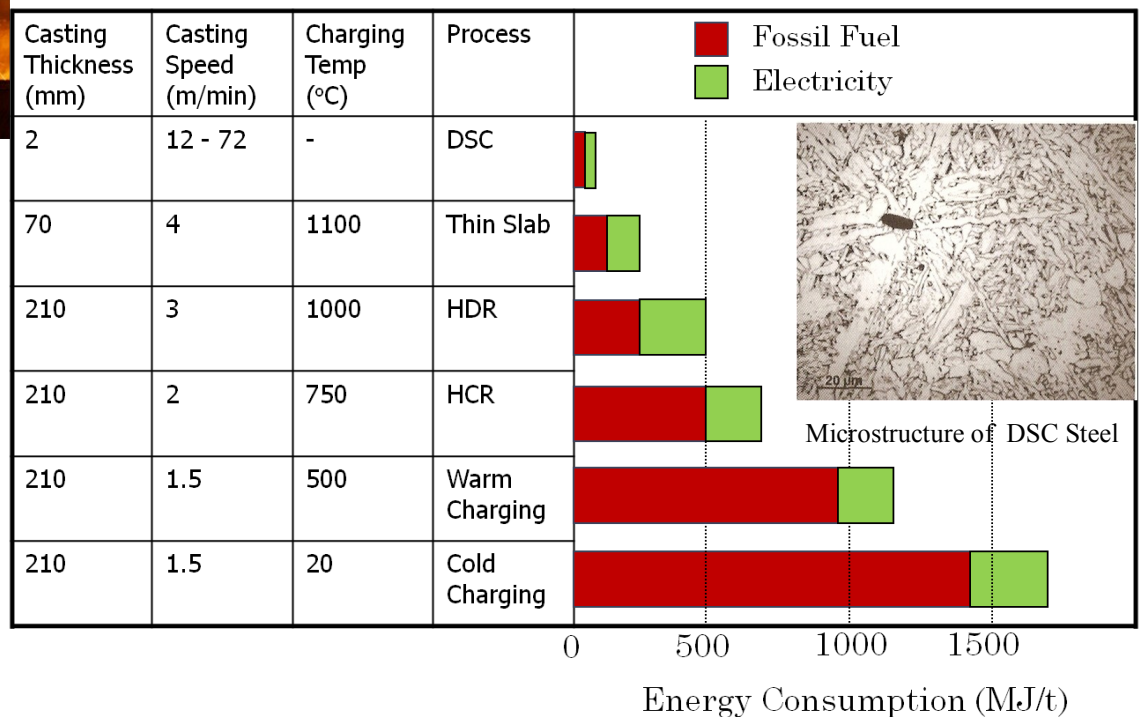
# SEMS Research Highlights



## Energy Efficient Processes for Steel Products: Opportunities and Critical Challenges

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This newsletter presents the research conducted within the School of Engineering, Mathematics and Science (SEMS) at Robert Morris University (RMU). It covers various relevant topics including: interdisciplinary efforts, successful research grants, student research, posters and papers, journal publications, presentations at national and international conferences, contribution to professional societies, STEM educational research, industrial consulting collaborations and applied research.



**Direct Strip Casting (DSC)** process is the realisation of a dream cherished by engineers for over 150 years. The process involves casting of thin strip of metal directly from liquid steel. This

novel process bypasses the traditional process of making a thick slab first and subsequently hot rolling it to the desired thickness. DSC results in process simplification leading to ladle-to-coil manufac-

turing completed in 45 seconds! Although the process saves costs and is environmentally friendly, adequate process control, material quality and variety, and mechanical properties represent critical challenges in the commercialization of the process.



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