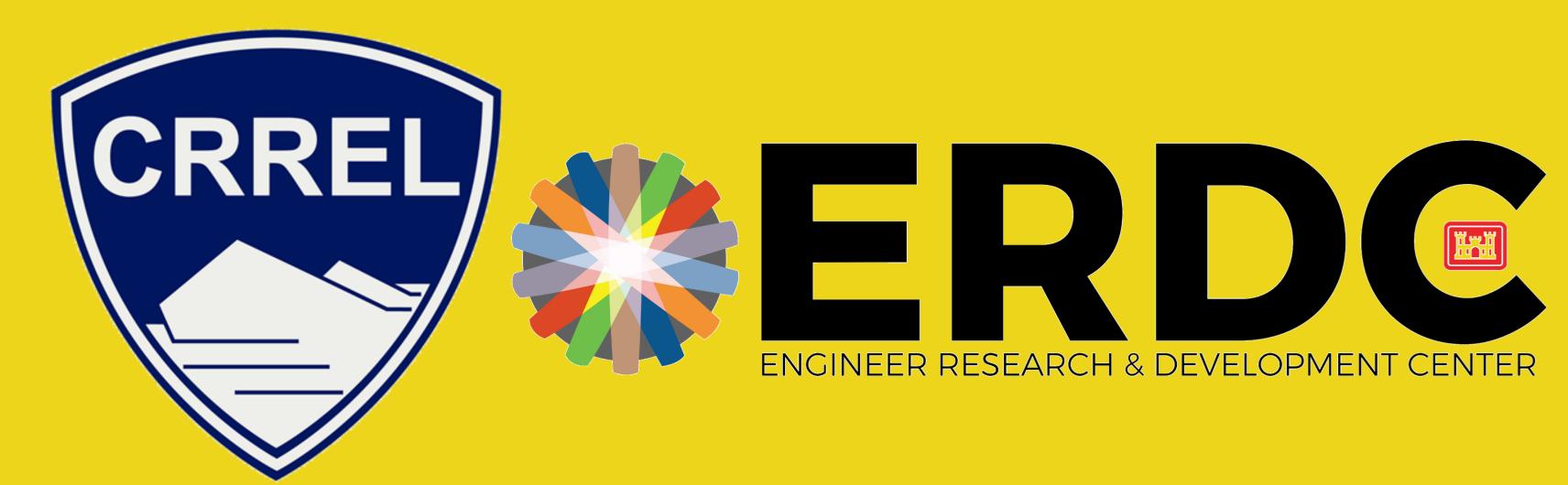


ADVANCED TRANSPORTATION ENGINEERING SYSTEMS

Electric Curing of Concrete at Subfreezing Temperature (Lab Scale)

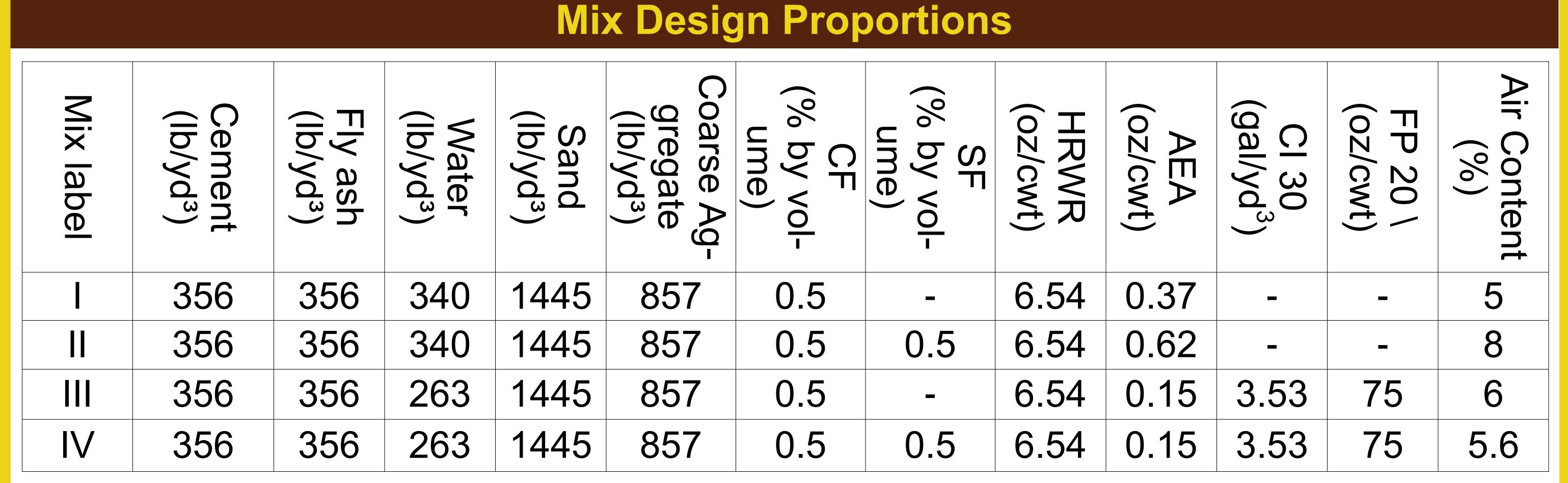
Mohamed Masbouba¹, Rim Najmeddine¹, Shahriar Abubakri, Ph.D.¹, Islam Mantawy, Ph.D., P.E.¹, Danielle Kennedy², Benjamin Watts Ph.D.²

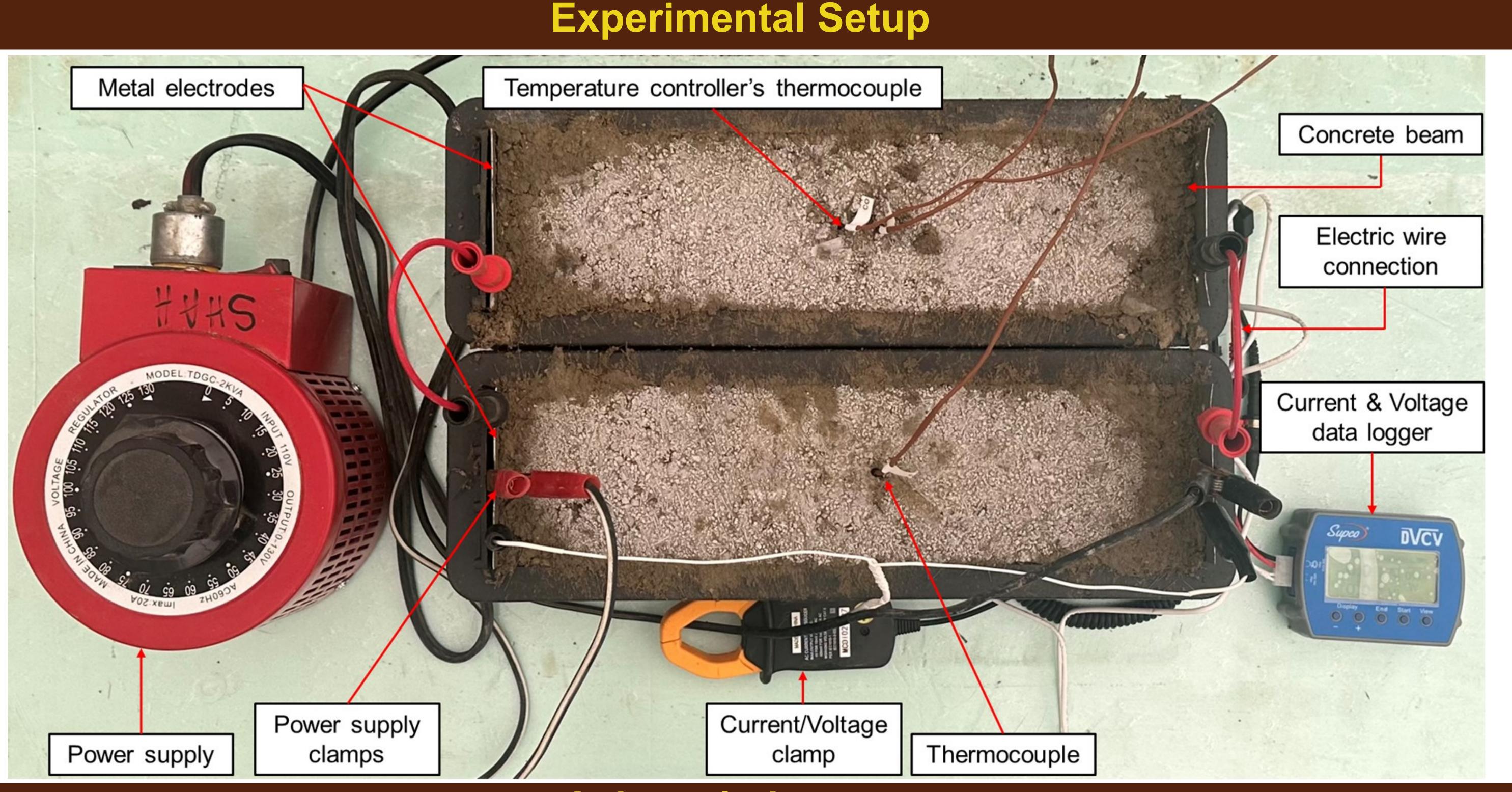
¹Rowan University, ²US Army Corps of Engineers



Background & Objectives

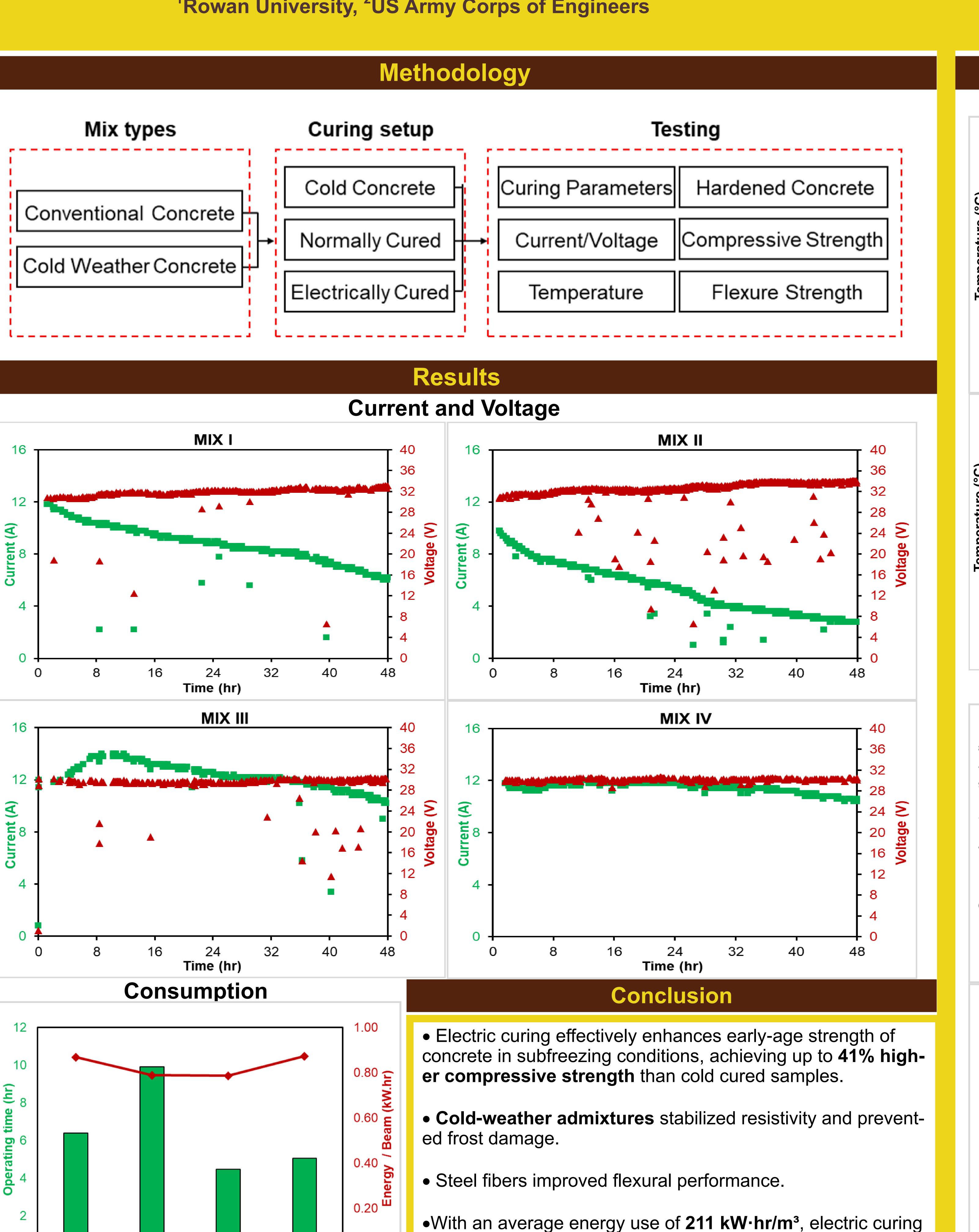
- ♦ Making concrete in cold climates is challenging, as low temperatures negatively affect hydration and strength development, while admixtures alone fail to prevent freezing.
- ♦ The study evaluates the effectiveness of electric curing of concrete beams under subfreezing conditions.
- ♦ It investigates the influence of cold-weather admixtures and conductive fillers on the electrical and thermal performance of concrete.
- ◆The economic feasibility of the lab-scale setup is assessed and the process is scaled up to field application to evaluate its practical implementation.





Acknowledgemen

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offers a practical, efficient, and scalable solution for durable

concrete in cold climates.

Mix IV

MIX III

