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Preface

In the guidelines for NCR, it is stated:

“Nordic Concrete Research is the primary scientific journal devoted to concrete in the Nordic countries, i.e, Denmark, Finland, Iceland, Norway and Sweden. The papers should have a Nordic connection, e.g., Nordic author; a researcher, PhD student or MSc student at a Nordic university; laboratory or field test in any of the Nordic countries or studies on topics considering specific Nordic conditions.”

One topic that considers “specific Nordic conditions” is frost and frost-resistant concrete. In this issue of NCR, there are three papers devoted to this important problem. A Swedish professor emeritus who previously has written pioneering works in this area has returned to it in a paper studying the Salt-Frost Scaling Test in an engineering way. Two companion papers from Norway are dealing with similar tests focusing on low CO₂-emission High Performance Concrete mixes.

Durability is essential for obtaining long service-life that in turn leads to smaller annual use of natural resources and connecting CO₂ emissions. Frost-resistance is part of the durability aspects of concrete structures. Almost all on-going concrete research is in one way or another devoted to sustainability. All steps from selecting green concrete with various Supplementary Cementitious Materials (SCMs) to prolonging service life through repair are included. In addition, efforts to minimize the risk of failures and damages leading to the need of replacing poor concrete castings with new ones are also important parts in making concrete construction more sustainable. This issue contains a Finnish paper assessing the risk of segregation due to compaction. We know that segregation leads to poor concrete and possible need of dismantling and replacing.

One Norwegian paper is studying the hydrate phases in concrete containing SCMs by using Energy Dispersive Microscopy (EDS). The phases are changing with changing composition of the concrete mix and changing curing temperatures. In another Norwegian paper, the researchers investigated hydration and compressive strength of concrete mixes containing novel SCMs. They concluded that total introduced porosity is not the only contribution to strength.

Two papers – A Norwegian and a Swedish one – are dealing with repair of prestressed concrete bridges. The Finnish paper discusses various repair options while the Swedish one compares importance, redundancy and robustness.

When writing this preface, it is just 14 months before the 25th Nordic Concrete Research Symposium in Sandefjord in Norway (August 12-15, 2025). The Norwegian Concrete Association will publish a Call for Papers during the autumn 2024. The link between the Symposium and the

Journal is tight. Why not submitting a four-page conference paper to the Symposium and a more detailed 20-page paper to the NCR Journal?

Stockholm in June 2024

Johan Silfwerbrand
Editor of NCR