Dr Jose Norambuena-Contreras is a Senior Lecturer in Civil Engineering at Swansea University, UK. He was formerly an Associate Professor at the University of Bio-Bio, Chile, where he was head of the Research Group LabMAT. Dr Norambuena-Contreras is currently the RILEM Regional Convener for Latin America. He received in 2024 the Robert L'Hermite medal in recognition of his research activity on self-healing bituminous materials for more sustainable and resilient road infrastructure.

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RILEM implementation manager (RIM): Good morning Jose, thank you for your availability to sit this interview. Where were you nine years ago, in 2015, when you joined RILEM?

Dr Jose Norambuena-Contreras (Jose): In 2015, I was a young assistant professor at the University of Bio-Bio in Chile. But my RILEM career started some years earlier. I spent the last year (2012-2013) of my PhD at Empa in Switzerland. I met RILEM for the first time there. I clearly remember that, as Dr Peter Richner, today Deputy Director Empa, was the RILEM president then. But probably my best feeling with RILEM was through Prof. Manfred Partl (*Editor's note: Prof. Manfred Partl has been RILEM Honorary member since 2017*), my mentor and supervisor then, together with Dr Álvaro García. When I finished my PhD, I returned to Chile in 2014 During that year, I applied for and successfully secured my first project as principal investigator. My first objective during the project was to formalise my subscription to RILEM, and the rest is history!

RIM: How old were you then?

Jose: I was 29 year-old. When Manfred introduced me to RILEM, he told me "When you start to build your own research group in Chile, you have to promote your work inside RILEM and join one of the RILEM Technical Committees". So I did, and I joined 237-SIB *Testing and characterization of sustainable innovative bituminous materials and systems*, my first ever TC. I don't really remember now if I joined formally, but I do recall that my interest in collaborating was born thanks to that group. Nowadays, it is very satisfying to see more and more PhD students interested in being part of RILEM.

RIM: It is not common to come across with researchers in Latin America with such strong connections in North America and Europe. Has RILEM played a role in this?

Jose: RILEM is an excellent platform to connect with world-class researchers. In Latin America, funds for travelling are quite rare compared to what happens in other

universities around the world. It is more feasible to secure funding to invite researchers to Chile than to obtain funding to attend all the events I have wanted to participate in.

RIM: But you travel a lot!

Jose: While I lived in Chile, this was a challenge. But this was one of the main messages from Manfred: *"Keep in touch! When you're back to Chile, it's necessary to maintenance the established relationships, to evaluate your goals constantly. Every year you need to attend conferences, you need to show your face"*. This was so important! My other research mentors, Prof Alvaro Garcia, a brilliant scientist at RWTH Aachen University, and Prof Erik Schlangen from TU Delft, nowadays very good friends of mine, used to say the same. You cannot connect via Internet with people, you must travel and make your research known. So, I apply every year for funds to attend different conferences and to establish connections.

RIM: Let's move now into the merit of this medal: you have been awarded the 2024 RILEM Robert L'Hermite medal for your work and achievements in self-healing asphalt pavement and use of waste materials in asphalt pavement. I think this medal sends a double message:1) it is lovely to see a medal going to Latin America, and 2) it is great to see a medal going to someone not working in cement and concrete areas. RILEM has many TCs working in cementitious materials, but it is not only that: Cluster F (Bituminous Materials and Polymers) is very active with its 7 TCs.

Jose: Yes! When I applied for this award last year, it was my first time. During the first semester of 2023, I attended various events, where I presented the main contributions of my research group. I received very good feedback concerning my job, and someone suggested I should apply. I was very busy in applying for different positions in the UK, then. It was a very intense time. When I secured my position at Swansea University, the next step was to apply for the RILEM medal. I was notified that I would be awarded the medal in February this year. It was a sunny summery Chilean day. I told my wife Irene, and she congratulated me as she knows that during my last 5 years in Chile, I worked probably 15 hours per day. But this medal goes to my research group, too. You receive the medal, but you represent people.

RIM: It is very nice of you to acknowledge this.

Jose: It is a mistake to believe that one achieves these types of awards on one's own. Those working with me know that I highly value this social dimension. My Rilem medal represents BSc, master's and PhD students, postdocs, technicians and collaborators who contribute to research progress day by day. I thank my former research group, which includes members from Venezuela, Colombia, Mexico, and Chile. Beside a research group, you also need a research vision! My vision is unique because it involves the valorisation of waste using various experimental techniques to create advanced engineering materials. Sometimes, I explain to my son Lucas how it's possible to self-

heal materials using our own waste. This vision integrates approaches from material science, civil engineering, and chemical engineering disciplines. It's really fantastic!

RIM: If you had to reach a very broad audience, not necessarily made of engineers or of people with a technical background, to explain your work, how would you describe your research and your achievements?

Jose: In my opinion, the most important thing is to present your own vision. My research has a very multidisciplinary approach, so I would explain how it is necessary to combine different disciplines to obtain a global objective, and which is typically complex itself.

RIM: How far are your research outcomes from commercialization?

Jose: It's a very good question because it's always a challenge. Some results can be implemented immediately, and other products need different certifications, or you need to design specifications, protocols, to be applied in practical solutions. The exception is the technology of encapsulated rejuvenators for asphalt self-healing, which is already happening. Significant progress has been made in recent years!

RIM: Your presentation in Toulouse (*Editor's note: Dr Norambuena-Contreras will present a keynote lecture for the Robert L'Hermite award ceremony at the 78th RILEM Annual Week in Toulouse, France, in August 2024*) will be addressed to the delegates of the conference. What are you planning to present?

Jose: My keynote lecture will present an overview of research focused on different emerging technologies to promote the self-healing capability in bituminous materials from a vision of waste valorisation. Research on roads is essentially a "Civic Mission" because almost everyone uses a road every day. But to increase the service life of your road, it's necessary to design self-healing asphalts using different approaches and combining several disciplines in your research, not only civil engineering. I will also mention how important this medal is for me. Considering the lower research budgets in Latin America compared to wealthier countries, achieving the same high-quality results requires working even harder. Everything is a double effort in Latin America.

RIM: Thank you, Jose. Looking forward to listening to your presentation in Toulouse (*Editor's note: the video of the Robert L'Hermite award ceremony and lecture will be posted on the RILEM YouTube channel after the event).*

Jose: I appreciate this interview and the opportunity to share my story with RILEM.