



Fellowship-Beware Industry

This fellowship is meant for an international researcher (PhD) who has spent less than 12 months in Belgium over the last 36 months. It offers an attractive salary for 1 to 3 years and an interesting experience at a research center.

CoRI (Coatings Research Institute), your partner in Coatings Science and Technology, was created in 1957 by the paint, varnish and ink industries in Belgium. With our collective knowledge and advanced practices, we strive to promote sustainability and quality with paint ingredients and formulations. At the heart of this movement for almost 60 years, CoRI has been one of the leading driving forces of development in this sector. We work towards stimulating technological innovation and scientific research in the paint, varnish and coating industries.

With 23 staff members, mainly researchers, CoRI had a turnover of €2.5 M in 2013, with 60% from collective and contracted research programs – a growth of 20% in 2 years. Even with a small staff, we have a broad knowledge of paint formulation and CoRI is recognized worldwide for its expertise.

One of the main goals of paint is to protect the metallic substrate from corrosion, which costs 4 % of the GDP annually (1). One cause of corrosion is the delamination of paint from the substrate. This delamination occurs when the internal stress in the paints are too high (2). CoRI has developed a unique apparatus to measure stress in air, water, different relative humidity content, and different temperatures (3). This lead to developing formulation that dramatically decreases stress and therefore increases adherence of the coating to the substrate (4). Measuring the stress phenomena in organic coatings is paramount to develop better coatings; CoRI aims to modernize its equipment by using microscopic sensors that could be used for field testing.

In this context, we are looking for an engineer/physicist to develop a new instrument/sensor for measuring internal stress in coatings. We will help build the project and apply for the fellowship.

Contacts:

Dr Simon Kervyn (project manager)

Dr Carine Lefèvre (Director)

Kervyn.s@cori-coatings.be

Lefevre.c@cori-coatings.be

Phone : +32 2 655 07 20

- (1) Munger C. G., Vincent, Louis D. (2014), "Corrosion Prevention by Protective Coatings, third edition.
- (2) Perera, D. Y. (1996). On adhesion and stress in organic coatings. *Progress in Organic Coatings*, 28, 21–23. doi:10.1016/0300-9440(95)00585-4
- (3) Perera, D. Y., Vanden Eynde, D. (1981). Consideration on a cantilever (beam) method for measuring the internal stress in organic coatings. *Journal of Coatings Technology*, 53, 39-44.
- (4) Piens, M., & De Deurwaerder, H. (2001). Effect of coating stress on adherence and on corrosion prevention. *Progress in Organic Coatings*, 43, 18–24. doi:10.1016/S0300-9440(01)00243-0