**Transformative Science for Soil Acidity Reduction in Sub-Saharan Africa**

**Position:** Postdoctoral research associate (PDRA)
**Starting date:** 1 April
**Duration:** 24 months (fixed term)
**Topic:** Experimental Soft Matter
**Requirement:** PhD in Experimental Physics, Physical Chemistry, Materials Science, Chemical Engineering, or related fields

**DeKUT, Nyeri, Kenya, and Embu University, Embu, Kenya.**

We invite applications for **two Postdoctoral Research Fellowships** to join a bold, mission-driven program that tackles one of the most chronic and limiting constraints on agricultural productivity in sub-Saharan Africa: **soil acidity**. This initiative integrates Soft-matter physics, Formulation Science and Advanced Imaging to develop breakthrough, field-ready solutions capable of transforming millions of hectares of degraded land.

**About the Opportunity**

The selected postdoctoral researchers will work at the frontier of **physical chemistry, chemical engineering, materials science, or experimental soft-matter physics**, applying their disciplinary expertise to design, test, and optimize next-generation technologies for soil acidity mitigation. This is not a conventional academic project—it is a continental mission with real-world deployment pathways, strong industry and policy interfaces, and a systems-level innovation framework.

You will join a multidisciplinary team with expertise spanning sustainable materials, soil science, materials engineering, entrepreneurs, and mission-oriented innovation. The work will involve laboratory experimentation, materials characterization, prototype development, and translational research aimed at scalable, affordable, and climate-smart solutions. You will also work with experimentalist and theoretical modellers from our partner universities- University of Stellenbosch (South Africa) and the Universities of Edinburgh and Durham (UK). As part of the project, you will have the chance to work for 6 months at the University of Durham (UK), together with the other partners from the team.

**Key Responsibilities**

- Source materials and soil samples
- Design and conduct experimental research on soil supplements capable of regulating soil acidity
- Ion release and transport: experimental quantification of dissolution kinetics, diffusion, and reaction processes in hydrated polymer matrices and soil analoguess
- Determine Structure-property relationships of supplements: linking microstructure (e.g. polymer network morphology, tortuosity, swelling behaviour) to macroscopic properties such as water retention, mechanical stability, and ion release rates;

- Soil-particle interactions: investigation of capillarity, wetting, granular packing, and mechanical interactions between composite particles and real soils;
- Integrate mechanistic understanding with practical constraints of African smallholder farming systems.
- Excellent communication skills and a producing? track record of scientific publications.

**Required Qualifications**

- PhD in **Physical Chemistry, Chemical Engineering, Materials Science, or Experimental soft-matter-Physics** (completed or near completion).
- Strong experimental background with demonstrated ability to design, execute, and interpret complex laboratory studies.
- Experience with materials synthesis, surface/interface science, reaction engineering, colloids, hydrogels, or related areas.
- Excellent communication skills and a track record of scientific publications.

**Preferred (but not required) Experience**

- Work with mineral-based systems, dolomites, carbonates, silicates, or soil amendments.
- Experience in controlled-release technologies, nanomaterials, or reactive particle engineering.
- Experience with polymer gels, biopolymers, composite materials, or agrowaste-derived materials.
- Familiarity with agricultural systems, soil chemistry, or environmental materials.
- Interest in mission-oriented innovation, sustainability, and scalable technology deployment.

**What We Offer**

- The opportunity to contribute to a **continental-scale mission** with measurable impact on food security, soil health, and climate resilience.
- A dynamic, interdisciplinary research environment with strong mentorship and international collaborations.
- Access to advanced laboratories, analytical facilities, and field-testing networks in home and partner universities.
- Competitive salary and benefits commensurate with experience.

**How to Apply**

Please submit the following as a single PDF:

- Cover letter describing your research experience, motivation, and fit for the position
- Curriculum vitae
- Contact information for three referees
- Up to two representative publications

Applications will be reviewed on a rolling basis until the positions are filled.

Where to send

Email: admin@originlabsafrica.org