



GNeuS Programme is proud to introduce you to its Fellows, selected within Call 2



Few words about you and your research project

I am **Dnyaneshwar Bhosale**, trained in Solid State Physics with a PhD completed in 2018. I have been engaged in interdisciplinary research across Physics, Chemistry, and Materials Engineering, utilizing neutron and X-ray scattering facilities, as well as materials characterization techniques for solid-state device applications.

My GNeuS project focuses on **studying magnetic excitations in RFeO3 systems for spintronics applications**. I conduct inelastic neutron scattering measurements on RFeO3 single crystals to investigate the various **magnetic interactions** within the crystal and perform **Hamiltonian modelling** to derive essential magnetic interaction parameters.

I will have my industrial secondment at **Kiutra GmbH**, where I will have opportunity to work in **magnetic refrigeration domain** and academic secondment will be at **ILL, France** to learn **neutron scattering instrumentation**.

What is your background?

How have you heard about GNeuS?



During my doctorate, I utilized **high-temperature neutron diffraction techniques** to investigate ionic conduction pathways in cathode and electrolyte materials for solid oxide fuel cell technology applications.

Additionally, I studied the structural and magnetic properties of various oxide materials.

I have worked at **Bhabha Atomic Research centre, Mumbai** and at **Savitribai Phule Pune University, Pune, India** during my doctorate degree.

Further, I have had a postdoctorate experience in magnetic materials at **Sungkyunkwan university, South Korea**.

Following is some interesting publications utilizing neutron techniques: [Link-1](#) and [Link-2](#).

I learned about the GNeuS project through LinkedIn.



Why did you apply specifically on GNeuS?

My interest in neutron scattering and spin transport materials makes this two-year project **highly beneficial** for establishing my career in neutron scattering for energy applications.

The GNeuS project will be a great opportunity for me to **advance the use of neutrons for energy-saving applications** and build my career as a **neutron scattering scientist** in this domain.

Additionally, the GNeuS program **offers flexibility to utilize worldwide neutron scattering facilities** and provides opportunities to participate in various training programs and conferences worldwide.

What impacts do you expect from the GNeuS fellowship?



The GNeuS fellowship will **significantly enhance my expertise in neutron scattering** and its applications in energy-saving technologies. It will provide me with advanced knowledge of magnon-phonon interactions and spin wave behavior in RFeO3 systems. Additionally, the **program's flexibility and access to global neutron scattering facilities** will broaden my research capabilities and professional network.

By the end of the fellowship, I aim to deliver:

1. **Detailed studies on magnetic excitations and spin wave behavior in RFeO3 systems.**
2. **Accurate Hamiltonian modeling to derive essential magnetic interaction parameters.**

I have planned some dissemination activities, such as submit research findings to peer-reviewed journals, present results at international conferences and workshops and foster partnerships with other researchers and institutions.

My findings will hopefully be used to enhance the **use of neutron scattering for developing energy-saving technologies**.

In terms of career development, I expect to later establish myself as a **neutron scattering scientist with a focus on energy applications**.

And from a broader impact point of view, I will contribute to the scientific community by **advancing knowledge in neutron scattering** and its practical applications in spintronics and energy technologies.

