

DR. KAYZAD SOLI NILGIRIWALA TUBERCULOSIS RESEARCH OFFICER



Dr. Kayzad Soli Nilgiriwala has diverse research experience in the fields of microbiology, molecular biology, protein biochemistry & crystallization, and bioremediation. During his doctoral research at Bhabha Atomic Research Centre (BARC), Mumbai, he cloned and over-expressed a novel alkaline phosphatase gene from a *Sphingomonas* sp. and applied it for bioremediation of heavy metals like uranium from alkaline solutions. The alkaline phosphatase protein was also studied by him for its biochemistry and structural characteristics after crystallization. His postdoctoral research experience at Massachusetts Institute of Technology (MIT), USA helped him to broaden his research horizon in the fields of synthetic & systems biology during which he was

involved in construction and standardization of complex biomolecular circuits and understanding the effects of retroactivity in transcription modules. In order to attenuate effects of retroactivity, he constructed a biological insulator circuit in a phosphorylation-based system during this research project at MIT. He is currently researching in the field of molecular medical microbiology and genomics of multi-drug resistant (MDR) strains of *Mycobacterium tuberculosis* (M.tb) at the Foundation for Medical Research (FMR), Mumbai. MDR strains of M.tb are envisioned as a major global threat if not looked into; hence, in one of the projects, he is studying the transcriptional profile of multiple signature genes in drug-sensitive and -resistant strains to understand the accelerated rate of phenotypic resistance development in M.tb. This study has the potential for developing new diagnostic technologies and to predict novel targets for better therapeutics. Besides doing science, he is also interested in extracurricular activities such as astronomy, badminton, table-tennis, and chess.