

# Sayyar Muhammad

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## INTRODUCTION

Dr. Sayyar Muhammad completed his bachelors (physical sciences) and Masters (Chemistry with gold medal) from University of Peshawar, Pakistan in 1997 and 1999-2000, respectively. Then he started his professional career as lecturer and served Islamia College Peshawar, Pakistan (September, 2000 to October, 2001), University of Malakand, Chakdara Dir, Pakistan (November, 2001 to August, 2002) and Higher Education Department (Colleges) Peshawar, Khyber-Pakhtunkhwa, Pakistan (September, 2002 till December 2007) and Kohat University of Science & Technology Kohat, Pakistan (January 2008 to February 2010) completed M.Phil in Surface Chemistry here before moving to the present institution. He joined Islamia College in March 2010 as lecture and then promoted to Assistant Professor after he moved to United Kingdom in November 2012 for PhD. Dr Sayyar completed his PhD in July 2016 electrochemistry and electrocatalysis under the supervision of Dr. Darren A. Walsh from the school of chemistry, the University of Nottingham, UK through Vice Chancellor Scholarship for Research Excellence of the University of Nottingham and Faculty Development Program of the Islamia College Peshawar, Pakistan. In August 2016, he rejoined his duty as assistant professor at the department of chemistry Islamia College Peshawar and working till date. He got first class throughout his academic career.

## RESEARCH INTERESTS

His research interest are fundamental electrochemistry (theory of electron transfer and mass transport), kinetics of interfacial reactions and electrocatalysis especially fuel cells catalysis for future clean energy technology. Synthesis and characterization of room temperature ionic liquids, and their safe use for the development of energy storage and conversion devices (electrolysers) such as batteries, fuel cells, solar cells etc, The use of electroanalytical techniques for the development of catalysts and catalytic media and investigation of surface electrocatalysis of energy-conversion-relevant redox reactions in ionic liquid electrolytes including the formation of surface oxide films on metal electrodes by trace water oxidation in protic ionic liquids and their electrocatalytic role during oxygen reduction reaction and oxidation of small organics such as alcohols, formic acid, dimethyl ether etc. His research also focuses on the electrocatalytic conversion of CO<sub>2</sub> to useful chemicals and liquid fuels and the application of electrochemical principles and techniques in industries and other fields of science.

He is author of few original research articles and has a sound experience in teaching different courses to graduate and undergraduate levels and regularly perform chemistry demonstration lectures and presentations for students and general audience both within and outside Pakistan.