

**Name:** Dr. A K. Ghorai

**Designation:** Associate Professor & Head of Physics Department

**Qualification:** M.Sc., Ph.D. (Physics)

**Date of Joining:** 1st June, 2004

**Email:** [alokghorai@gmail.com](mailto:alokghorai@gmail.com)

**Specialization:** Solid State Physics

**Research Interest/Area(s):** Semiconductor Physics



**Academic Qualification:**

Qualification	Institution	Year
M.Sc.	Calcutta University	1986
Ph.D.	Jadavpur University	1995

**Research Experience:**

Designation	Place of Work/ Institution	Duration	
		From	To
Junior Research Fellow (CSIR)	Jadavpur University	November 1989	October 1992
Senior Research Fellow (CSIR)	Jadavpur University	November 1992	October 1994
Research Associate (CSIR)	Jadavpur University	March 1996	April 1998

**Teaching Experience:**

Designation	Place of Work/ Institution	Duration	
		From	To
Lecturer	Darjeeling Govt. College	March 2001	February 2002
Lecturer	Suri Shilpa Vidyapith	October 2003	May 2004
Assistant Professor	Kalimpong College	June 2004	September 2017
Associate Professor	Kalimpong College	October 2017	Continuing

**Membership in Academic Body:**

- i. Life Member of Indian Physics Association
- ii. Life Member of Indian Association of Cultivation of Science

**Publications:**

Journal					
Sl. No.	Title of the article with page No.	Name of the Journal	ISSN	Vol. & Issue No	Year of Publication
1	Effect of Non-parabolic Band on the Scattering Rates of Free Electrons in High Purity Semiconductors at Low Lattice Temperatures. Pg. 247-258	phys. stat. sol. (b)	0370-1972	163	1991
2	On the Scattering Rates of Free Electrons in High Purity Semiconductors at Low Lattice	phys. stat. sol. (b)	0370-1972	170	1992

	Temperatures. Pg. 263-269				
3	Field Dependence of the Effective Electron Temperature for Finite Energy of the Deformation Potential Acoustic Phonons. Pg.K57-K60	phys. stat. sol. (b)	0370-1972	<b>175</b>	1993
4	Effect of Finite-Energy Acoustic Phonons on the Zero-Field Mobility Characteristics in High Purity Semiconductors at Low Lattice Temperatures. Pg. 13858-13860	Phys. Rev. B	2469-9950	<b>47(20)</b>	1993
5	Lattice Scattering of a Two-Dimensional Electron Gas at Low Temperatures. Pg. 18268-18271	Phys. Rev. B	2469-9950	<b>48(24)</b>	1993
6	Mobility of Electrons in High Purity Semiconductors at Low Lattice Temperature. Pg. K57-K60	phys. stat. sol. (b)	0370-1972	<b>181</b>	1994
7	Mobility Characteristics of Non-Equilibrium Carriers in III-V Compounds at Low Lattice Temperatures. Pg. 165-171	J. Phys. Chem. Solids	0022-3697	<b>56(2)</b>	1995
8	Non-Equilibrium Carrier Transport in III-V Compounds at Low Lattice Temperatures. Pg. 158-166	Physica B	0921-4526	<b>212</b>	1995
9	Two-Dimensional Electron-Lattice Scattering at Low Temperature. Pg. 5445-5448	Phys. Rev. B	2469-9950	<b>51(8)</b>	1995
10	Electron Transport in GaAs at Low Lattice Temperature. Pg. 125-136	phys. stat. sol. (b)	0370-1972	<b>197</b>	1996
11	Lattice Controlled Mobility in Quantized Surface Layers at Low Temperature. Pg. 3130-3132	J. Appl. Phys.	0021-8979	<b>80(4)</b>	1996
12	Lattice controlled electron transport in quantized surface layers at low temperature. Pg. 293-301	Surface Science	0039-6028	<b>380</b>	1997
13	Effect of Screening on Acoustic Phonon Limited Electron Mobility in Quantized Surface Layer in Semiconductor. Pg. No. 1453-1457	IJSETR	2278 – 7798	<b>2(7)</b>	2013
14	Inelastic Interaction of Nonequilibrium Carriers with Acoustic Phonons in Semiconductor Inversion Layer. Pg. No. 2644-2626	IJSETR	2278 – 7798	<b>3(10)</b>	2014
15	Acoustic Phonon Limited Cross Section for the Capture of an Electron by an Attractive Trap in Semiconductor Inversion Layer. Pg. No. 1837-1840	IJSR	2319-7064	<b>4(2)</b>	2015
16	Non-Equilibrium Two Dimensional Electron-Lattice Interaction at Low Temperature. Pg. No. 80-83	IJSR	2319 – 7064	<b>5(11)</b>	2016
17	Uncertainty in Environmental Risk Assessment. Pg. No. 281-284	IJSETR	2278 – 7798	<b>2(6)</b>	2017
18	Effect of Screening on Piezoelectric Scattering Rates of Free Electrons in 2DEG. Pg. No. 50-53	IJSER	2347 – 3878	<b>5(5)</b>	2017
19	Field-Dependent Electron Temperature due to Electron–Phonon Interaction in a 2DEG at Low Lattice Temperature. Pg. No. 1056-	J. Atoms and Molecules	2277 – 1247	<b>7(3)</b>	2017

	1062				
20	Lattice Controlled Hot Electron Mobility in 2DEG at Low Temperature. Pg. No. 195-198	IJSER	2347 – 3878	5(7)	2017
21	Phonon Controlled Temperature Dependence of Electron Mobility in 2DEG of GaAs Surface Layer. Pg. No. 281-287	IJSRST	2395-6011	3(6)	2017
22	Acoustic Phonon Controlled Electron Mobility in Semiconductor. Pg. No. 17601-17605	IJRSET	2347-6710	6(8)	2017
23	Effect of Nonparabolicity of Conduction Band on Temperature Dependent Electron Mobility in III-V Compounds. Pg. No. 408-413	IJSRST	2395-6011	3(7)	2017
24	On Hot Electron Transport in Si(100) 2DEG at Low Lattice Temperature. Pg. No. 1005-1009	IJSRST	2395-6011	3(7)	2017
25	Hot Electron Transport in Polar Semiconductor at Low Lattice Temperature. Pg. No. 1147-1154	J. Atoms and Molecules	2277 – 1247	7(6)	2017

#### Article/Book Chapter (with ISBN)

Sl. No.	Title of the Book/Book Chapter	Year of Publication	ISBN	Page No.	Publisher
1	Proc. MathSeminar 2011 on Recent Advances in the Application of Mathematical Analysis and Computational Techniques in Applied Sciences. (Topic: Monte Carlo Estimation of Pi ( $\pi$ )).	2011	978-81-909694-2-0	154-157	Siliguri College

#### Article/Book Chapter (without ISBN)

Sl. No.	Title of the Book	Year of Publication	Page No.	Publisher
1	Proc. of Refresher Course on Environmental Studies (Topic: Environmental Risk Assessment by Monte Carlo Simulation.)	2014	123-126	UGC -Academic Staff College, Calcutta University, Kolkata
2	Seminar Abstracts of Advances in Biology: Eastern Himalayan Perspective (Topic: Environmental Risk Assessment in Biodiversity Hotspot by Monte Carlo Simulation)	2015	7	Department of Botany and Department of Zoology, Kalimpong College