

# Curriculum Vitae

**Name:** Dr. Krishnendu Aich

**Designation:** SACT-I

**Department:** Chemistry

**Email Id/Contact Number:**

**E-mail:** [krishnendu.aich8@gmail.com](mailto:krishnendu.aich8@gmail.com)

**Mobile:** +91 8240936101



## Educational Qualification (In chronological order):

Exam Passed	Year	Institution studied	Board/ University	% of Marks	Subjects Studied
10 <sup>th</sup> (Madhyamik)	2002	Khajra S.C.M. High School	W.B.B.S.E	71.12	Bengali, English, Physical Science, Life Science, Mathematics, History, Geography
12 <sup>th</sup> (Higher Secondary)	2004	Keshiary High School	W.B.C.H.S.E	51.3	Bengali, English, Chemistry, Physics, Mathematics, Biology
B.Sc	2007	Belda College	Vidyasagar University	56.37	Chemistry (Hons.), Physics, Mathematics
M.Sc	2009	Vidyasagar University	Vidyasagar University	70.5	Chemistry (Organic Chemistry Specialization)
Ph.D	2016	Indian Institute of Engineering Science & Technology, Shibpur	Indian Institute of Engineering Science & Technology, Shibpur	NA	Chemistry

## Area of Interest:

- Organic Synthesis
- Design and Synthesis of Fluorescence Probe for the Detection of Metal Ions, Anions, Reactive Oxygen Species, Nerve Gas Agents Stimulants and Other Environmentally Hazardous Species
- Synthesis of Aggregation Induced Emission (AIE) Dyes and their Applications in Live-Cell Imaging
- Design and Synthesis of Stimuli Responsive Solid State Emissive Dyes

## Teaching Experience:

- **Sammilani Mahavidyalaya, Baghajatin Colony, Kolkata, West Bengal 700094 (September 2018 – Current)**

## Research Experience:

- **Ph.D: Indian Institute of Engineering Science and Technology, Shibpur, India. (January 2010 – February 2016)**

Supervisor: Dr. Shyamasprosad Goswami

Title of Thesis: Design and synthesis of fluorescence sensors for important biological substrates including ions

- **Post-Doctoral Research Fellow (N-PDF): Jadavpur University, India. (February 2016 – February 2018)**  
**Funding agency: DST-SERB**

Supervisor: Dr. Tapan Kumar Mondal

Area of research: Development of novel optical and electrochemical sensors for the recognition of hazardous metal ions and anions

## Publications:

Sl. No.	Authors	Title	Name of Journal	Vol./ Page No./ Year	ISSN No.
1.	S. Gharami, <a href="#">K. Aich</a> , S. Das, L. Patra, T. K. Mondal*	Facile detection of organophosphorus nerve agent mimic (DCP) through a new quinolinebased ratiometric switch	New Journal of Chemistry	43, 8627-8633, 2019	1144-0546
2.	S. Maity, , <a href="#">K. Aich</a> , C. Prodhan, K. Chaudhuri, A. K. Pramanik, S. Das, J. Ganguly*	Solvent-Dependent Nanostructures Based on Active p-Aggregation Induced Emission Enhancement of New Carbazole Derivatives of Triphenylacrylonitrile	Chemistry A European Journal	25, 4856 – 4863, 2019	1521-3765
3.	S. Gharami, <a href="#">K. Aich</a> , D. sarkar, P. Ghosh, N. Murmu,* T. K. Mondal*	An ESIPT based chromogenic and fluorescent ratiometric probe for Zn <sup>2+</sup> with imaging in live cells and tissues	New Journal of Chemistry	43, 1857-1863, 2019	1144-0546
4.	L. Patra, S. Das, S. Gharami, <a href="#">K. Aich</a> , T. K. Mondal*	A new multi-analyte fluorogenic sensor for efficient detection of Al <sup>3+</sup> and Zn <sup>2+</sup> ions based on ESIPT and CHEF features	New Journal of Chemistry	42, 19076-19082, 2018	1144-0546
5.	L. Patra, <a href="#">K. Aich</a> , S. Gharami, T. K. Mondal*	A new carbazole-benzothiazole based chemodosimeter for chromogenic and	Journal of Luminescence	201, 419-426, 2018	0022-2313

		fluorogenic detection of CN <sup>-</sup>			
6.	S. Gharami, <a href="#">K. Aich</a> , L. Patra and T. K. Mondal*	Detection and discrimination of Zn <sup>2+</sup> and Hg <sup>2+</sup> using a single molecular fluorescent probe	New Journal of Chemistry	42, 8646-8652, 2018	1144-0546
7.	S. Das, <a href="#">K. Aich</a> , L. Patra, K. Ghoshal, S. Gharami, M. Bhattacharyya, T. K. Mondal*	Development of a new fluorescence ratiometric switch for endogenous hypochlorite detection in monocytes of diabetic subjects by dye release method	Tetrahedron Letters	59, 1130-1135, 2018	0040-4039
8.	<a href="#">K. Aich</a> , S. Das, S. Gharami, L. Patra and T. K. Mondal*	Triphenylamine-benzimidazole based switch offers reliable detection of organophosphorus nerve agent (DCP) both in solution and gaseous state	New Journal of Chemistry	41, 12562 – 12568, 2017	1144-0546
9.	S. Gharami, D. Sarkar, P. Ghosh, S. Acharyya, <a href="#">K. Aich</a> , N. Murmu, T. K. Mondal*	A coumarin based azo-phenol ligand as efficient fluorescent “OFF-ON-OFF” chemosensor for sequential detection of Mg <sup>2+</sup> and F <sup>-</sup> : Application in live cell imaging and as molecular logic gate	Sensors and Actuators B: Chemical	253, 317 – 325, 2017	0925-4005
10.	<a href="#">K. Aich</a> , S. Das, S. Goswami*, C. K. Quah, D. Sarkar, T. K. Mondal and H.-K. Fun	Carbazole-benzimidazole based dyes for acid responsive ratiometric emissive switches	New Journal of Chemistry	40, 6907 – 6915, 2016	1144-0546
11.	S. Das, <a href="#">K. Aich</a> , S. Goswami*, C. K. Quah and H.-K. Fun	FRET-based fluorescence ratiometric and colorimetric sensor to discriminate Fe <sup>3+</sup> from Fe <sup>2+</sup>	New Journal of Chemistry	40, 6414 – 6420, 2016	1144-0546
12.	K. Ghoshal, S. Das, <a href="#">K. Aich</a> , S. Goswami, S. Chowdhury, M. Bhattacharyya*	A novel sensor to estimate the prevalence of hypochlorous (HOCl) toxicity in individuals with type 2 diabetes and dyslipidemia	Clinica Chimica Acta	458, 144 – 15, 2016	0009-8981
13.	S. Das, S. Goswami*, <a href="#">K. Aich</a> , K. Ghoshal, C. K. Quah, M. Bhattacharyya and H.-K. Fun	ESIPT and CHEF based highly sensitive and selective ratiometric sensor for Al <sup>3+</sup> with imaging in human blood cell	New Journal of Chemistry	39, 8582 – 8587, 2015	1144-0546
14.	<a href="#">K. Aich</a> , S.	Cd <sup>2+</sup> triggered the FRET	Inorganic	54, 7309 – 7315,	0020-1669

	Goswami*, S. Das, C. D. Mukhopadhyay, C. K. Quah and H.-K. Fun	“ON”: a new molecular switch for the ratiometric detection of Cd <sup>2+</sup> with live-cell imaging and bound X-ray structure	Chemistry	2015	
15.	<a href="#">K. Aich</a> , S. Goswami*, S. Das and C. D. Mukhopadhyay	A new ICT and CHEF based visible light excitable fluorescent probe easily detects <i>in vivo</i> Zn <sup>2+</sup>	RSC Advances	5, 31189 – 31194, 2015	2046-2069
16.	S. Goswami*, S. Das and <a href="#">K. Aich</a>	Fluorescent chemodosimeter based on spirobenzopyran for organophosphorus nerve agent mimics (DCP)	RSC Advances	5, 28996 – 29001, 2015	2046-2069
17.	S. Goswami*, <a href="#">K. Aich</a> , S. Das, C. Das Mukhopadhyay, D. Sarkar and T. K. Mondal	A new visible light excitable ICT-CHEF mediated fluorescence ‘turn on’ probe for the selective detection of Cd <sup>2+</sup> in mixed aqueous system with live-cell imaging	Dalton Transactions	44, 5763 – 5770, 2015	1477-9226
18.	S. Goswami*, <a href="#">K. Aich</a> , S. Das, B. Pakhira, K. Ghoshal, C. K. Quah, M. Bhattacharyya, H.-K. Fun and S. Sarkar	A triphenyl amine-based solvatofluorochromic dye for the selective and ratiometric sensing of OCl <sup>-</sup> in human blood cells	Chemistry an Asian Journal	10, 694 – 700, 2015	1861-4728
19.	S. Goswami*, S. Das, <a href="#">K. Aich</a> , P. K. Nandi, K. Ghoshal, C. K. Quah, M. Bhattacharyya, H.-K. Fun and H. A. Abdel-Aziz	A rhodamine-quinoline based chemodosimeter capable of recognising endogenous OCl <sup>-</sup> in human blood cell	RSC Advances	4, 24881 – 24886, 2014	2046-2069
20.	S. Goswami*, S. Das, <a href="#">K. Aich</a> , D. Sarkar and T. K. Mondal	A coumarin based chemodosimetric probe for ratiometric detection of hydrazine	Tetrahedron Letters	55, 2695 – 2699, 2014	0040-4039
21.	S. Goswami*, <a href="#">K. Aich</a> , S. Das, S. B. Roy, B. Pakhira and S. Sarkar	A reaction based colorimetric as well as fluorescence ‘turn on’ probe for the rapid detection of hydrazine	RSC Advances	4, 14210 – 14214, 2014	2046-2069

22.	S. Goswami*, A. K. Das, <a href="#">K. Aich</a> , A. Manna, H.-K. Fun and C. K. Quah	Single sensor for multiple analytes: fluorogenic detection of Al <sup>3+</sup> in aqueous media and AcO <sup>-</sup> in organic media	Supramolecular Chemistry	26, 94 – 104, 2014	1061-0278
23.	S. Goswami*, A. K. Das, A. K. Maity, A. Manna, <a href="#">K. Aich</a> , S. Maity, P. Saha and T. K. Mandal	Visual and near IR (NIR) fluorescence detection of Cr <sup>3+</sup> in aqueous media <i>via</i> spirobenzopyran ring opening with application in logic gate and bio-imaging	Dalton Transactions	43, 231 – 239, 2014	1477-9226
24.	S. Goswami*, <a href="#">K. Aich</a> , S. Das, A. K. Das, D. Sarkar, S. Panja, T. K. Mondal and S. Mukhopadhyay	A red fluorescence 'off-on' molecular switch for selective detection of Al <sup>3+</sup> , Fe <sup>3+</sup> and Cr <sup>3+</sup> : experimental and theoretical studies along with living cell imaging	Chemical Communications	49, 10739 – 10741, 2013	1359-7345
25.	S. Goswami*, S. Das, <a href="#">K. Aich</a> , B. Pakhira, S. Panja, S. K. Mukherjee and S. Sarkar	A chemodosimeter for the ratiometric detection of hydrazine based on return of ESIPT and its application in Live-Cell imaging	Organic Letters	15, 5412 – 5415, 2013	1523-7060
26.	S. Goswami*, S. Das, <a href="#">K. Aich</a> , D. Sarkar, T. K. Mondal, C. K. Quah and H.-K. Fun	CHEF induced highly selective and sensitive turn-on fluorogenic and colorimetric sensor for Fe <sup>3+</sup>	Dalton Transactions	42, 15113 – 15119, 2013	1477-9226
27.	S. Goswami*, S. Das, <a href="#">K. Aich</a> , D. Sarkar, T. K. Mondal	Colorimetric as well as dual switching fluorescence 'turn on' chemosensors for exclusive recognition of Zn <sup>2+</sup> and HSO <sub>4</sub> <sup>-</sup> in aqueous solution: experimental and theoretical studies	Tetrahedron Letters	54, 6892 – 6896, 2013	0040-4039
28.	S. K. Seth*, N. K. Das, <a href="#">K. Aich</a> , D. Sen, H.-K. Fun, S. Goswami*	Exploring contribution of intermolecular interactions in supramolecular layered assembly of naphthyridine co-crystals: Insights from Hirshfeld surface analysis of their crystalline states	Journal of Molecular Structure	1048, 157 – 165, 2013	0022-2860

29.	S. Goswami*, D. Sen, A. K. Das, N. K. Das, <a href="#">K. Aich</a> , H.-K. Fun, C. K. Quah, A. K. Maity, P. Saha	A new rhodamine-coumarin Cu <sup>2+</sup> -selective colorimetric and 'off-on' fluorescence probe for effective use in chemistry and bioimaging along with its bound X-ray crystal structure	Sensors and Actuators B: Chemical	183, 518 – 525, 2013	0925-4005
30.	S. Goswami*, A. K. Das, <a href="#">K. Aich</a> , A. Manna, S. Maity, K. Khanra and N. Bhattacharyya	Ratiometric and absolute water-soluble fluorescent tripodal zinc sensor and its application in killing human lung cancer cells	Analyst	138, 4593 – 4598, 2013	0003-2654
31.	S. Goswami*, S. Das, <a href="#">K. Aich</a>	An ICT based highly selective and sensitive sulfur-free sensor for naked eye as well as fluorogenic detection of Hg <sup>2+</sup> in mixed aqueous media	Tetrahedron Letters	54, 4620 – 4623, 2013	0040-4039
32.	S. Goswami*, A. K. Das, <a href="#">K. Aich</a> and A. Manna	Competitive intra- and inter-molecular proton transfer in hydroxynaphthyl benzothiazole: selective ratiometric sensing of acetate	Tetrahedron Letters	54, 4215 – 4220, 2013	0040-4039
33.	S. Goswami*, A. Manna, S. Paul, <a href="#">K. Aich</a> , A. K. Das and S. Chakraborty	Dual channel selective fluorescence detection of Al (III) and PPi in aqueous media with 'off-on-off' switch which mimics molecular logic gating (INHIBIT and EXOR gate) interpretations	Dalton Transactions	42, 8078 – 8085, 2013	1477-9226
34.	S. Goswami*, A. Manna, S. Paul, A. K. Das, <a href="#">K. Aich</a> and P. K. Nandi	Resonance-assisted hydrogen bonding induced nucleophilic addition to hamper ESIPT: ratiometric detection of cyanide in aqueous media	Chemical Communications	49, 2912 – 2914, 2013	1359-7345
35.	S. Goswami*, A. Manna, S. Paul, <a href="#">K. Aich</a> , A. K. Das and S. Chakraborty	Highly reactive (<1 min) ratiometric probe for selective 'naked-eye' detection of cyanide in aqueous media	Tetrahedron Letters	54, 1785 – 1789, 2013	0040-4039
36.	S. Goswami*, <a href="#">K.</a>	A highly selective and	Analyst	138, 1903 –	0003-2654

	<a href="#">Aich</a> , S. Das, A. K. Das, A. Manna and S. Halder	sensitive probe for colorimetric and fluorogenic detection of Cd <sup>2+</sup> in aqueous media		1907, 2013	
37.	S. Goswami*, <a href="#">K. Aich</a> , A. K. Das, A. Manna and S. Das	A naphthalimide-quinoline based probe for selective, fluorescence ratiometric sensing of trivalent ions	RSC Advances	3, 2412 – 2416, 2013	2046-2069
38.	S. Goswami*, A. K. Das, D. Sen, <a href="#">K. Aich</a> , H.-K. Fun and C. K. Quah	A simple naphthalene-based colorimetric sensor selective for acetate	Tetrahedron Letters	53, 4819 – 4823, 2012	0040-4039
39.	S. Goswami*, <a href="#">K. Aich</a> and D. Sen	Acridine based 'switching on' fluorescence sensor for Cd <sup>2+</sup> functioning in absolute aqueous media	Chemistry Letters	41, 863 – 865, 2012	0366-7022
40.	S. Goswami*, N. K. Das, <a href="#">K. Aich</a> and D. Sen	A naphthyridine based macrocyclic "switching on" fluorescent receptor for cadmium	Journal of Luminescence	131, 2185 – 2188, 2011	0022-2313
41.	P. Roy, S. Das, <a href="#">K. Aich</a> , S. Gharami, L. Patra and T. K. Mondal	A new highly selective and ratiometric chromogenic sensor for Cu <sup>2+</sup> detection	Journal of Indian Chemical Society	94, 755 – 760, 2017	0019-4522

### Seminar or Conference attended:

- International Conference: 3rd Asian Conference on Chemosensors and Imaging Probes (AsianChIP-2019), November 06<sup>th</sup> – 09<sup>th</sup>, 2019. Guru Nanak Dev University, Amritsar, Punjab. **(Present a Poster)**
- International Conference on Chemistry for Human Development (ICCHD-2018), January 8<sup>th</sup> – 10<sup>th</sup>, 2018. Heritage Institute of Technology, Kolkata in association with University of Calcutta, Kolkata, India. **(Present a Poster)**
- International Seminar on The Modern Trends in Inorganic Chemistry (MTIC), MTIC–XVII, December 11<sup>th</sup> – 14<sup>th</sup>, 2017. CSIR-NCL, Pune in association with IISER, Pune and S. P. Pune University, Pune, India. **(Present a Poster)**
- National Symposium on Recent Advances in Chemistry & Industry, August 2<sup>nd</sup> – 3<sup>rd</sup>, 2017. Indian Institute of Engineering Science and Technology, Shibpur and Indian Chemical Society, Kolkata, India. **(Present a Poster)**
- National Seminar on Emerging Trends in Chemistry, February 15<sup>th</sup>, 2017. Jadavpur University, Kolkata, India.
- 20<sup>th</sup> CRSI National Symposium in Chemistry, February 3<sup>rd</sup> – 5<sup>th</sup>, 2017. Gauhati University, India. **(Present a Poster)**
- International Symposium on Facets of Chemistry in Biology, January 12<sup>th</sup>, 2017. St. Xavier's College (Autonomous), India. **(Present a Poster)**

- 20<sup>th</sup> West Bengal State Science and Technology Congress-2013, February 28<sup>th</sup>-March 2<sup>nd</sup>, 2013. Bengal Engineering and Science University, Shibpur (Now IEST, Shibpur), India.

### **Others:**

- Junior Research Fellowship (2009): CSIR-NET, Rank - 133
- Graduate Aptitude Test in Engineering (2009): Percentile Score - 95.76, Rank - 284
- National Post-Doctoral Fellowship (2016): Science and Engineering Research Board (Department of Science and Technology), India