

## CV of Ajanta Deka

Name: Dr. Ajanta Deka

Designation: HoD (i/c), Department of Physics

Address for Communication: (office) \_\_\_\_\_Department of Physics

Girijananda Choudhury University

\_\_\_\_\_Hatkhowapara, Azara, Guwahati – 781017, Assam

Mobile No.: 9101165297

WA No:

Email: hod\_phy@gimt-guwahati.ac.in

Sex: Female

Date of Birth: 02.01.1975

### Educational Qualifications:

| Sl. No. | Examination Passed                               | Year of passing | Board / Council / University | Specialization    |
|---------|--|-----------------|------------------------------|-------------------|
| 1       | HSLC/10 <sup>th</sup> Std.                       | 1991            | A.H.S.E.C                    |                   |
| 2       | HSSLC/10+2 Std.                                  | 1993            | S.E.B.A.                     | Science           |
| 3       | Degree (Please Specify)<br><b>B.Sc.</b>          | 1996            | Gauhati University           | Physics (Honours) |
| 4       | Master's Degree (Please Specify)<br><b>M.Sc.</b> | 1999            | IIT Delhi                    | Physics           |

|   |  |      |                        |                             |
|---|--|------|------------------------|-----------------------------|
| 5 | M. Phil.(Please Specify)                               |      |                        |                             |
| 6 | Ph. D. (Please Specify)                                | 2011 | Tezpur University      | Nanomaterials (Theoretical) |
| 7 | Post-Doctoral (Please Specify)                         |      |                        |                             |
| 8 | Others(Please Specify)<br>State Eligibility Test (SET) | 2019 | SLET Commission, Assam | Physical Science            |

Languages known: Assamese, English, Hindi, Bengali, German  
(Read, Write & Speak)

Academic/ Administrative Experience:

Academic – 14 years

Administrative – 6 years

List of Publications:

**International Journals:**

- 1) R. C. Deka, **A. Deka**, P. Deka, S. Saikia, J. Baruah and P. J. Sarma, Recent advances in nanoarchitectonics of SnO<sub>2</sub> clusters and their application in catalysis, *Journal of Nanoscience and Nanotechnology* 20, 5153-5161 (2020). ISSN: 1533-4880 (Print); EISSN:1533-4899(Online)
- 2) **A. Deka**, Preferential sites for adsorption of CO on Au<sub>6</sub> clusters using DFT based reactivity descriptors, *Journal of Nanoscience and Nanotechnology* 20, 5288-5293 (2020). ISSN: 1533-4880 (Print); EISSN:1533-4899(Online).
- 3) S. Paul. J. Deka, **A. Deka**, N. K. Gour, Degradation mechanism of propylene carbonate initiated by hydroxyl radical and fate of its product radicals: A hybrid density functional study, *Atmospheric Environment* 216, 116952, (2019). ISSN: 1352-2310. (Scopus Serial No. 4363)

- 4) N.K.Gour, N.P. Rajkumari, R.C. Deka, S. Paul and **A. Deka**, Atmospheric degradation pathways and kinetics of 2-difluoroethanol ( $\text{CHF}_2\text{CH}_2\text{OH}$ ) with Cl atom: A theoretical investigation, *Chemical Physics Letters* 716, 35-41 (2019). ISSN: 0009-2614. (Scopus Serial No. 7406)
- 5) **A. Deka**, Structure and reverse hydrogen spillover in mononuclear  $\text{Au}^0$  and  $\text{Au}^{\text{I}}$  complexes bonded to faujasite zeolite: A density functional study, *Journal of Catalysts*, Vol. 2013, Article ID 467846 (2013). ISSN: 2314-5102 (Print), 2314-5110 (Online).
- 6) **A. Deka**, Influence of sodium loading on CO adsorption over faujasite zeolite supported gold monomers: A density functional study, *Review of Applied Physics*, Vol. 2, Issue 2 33-38 (2013). ISSN: 2327-1604.
- 7) **A. Deka** and R. C. Deka, A density functional study on equilibrium geometries, stabilities and electronic properties of  $\text{Au}_5\text{Li}$  binary clusters, *Applied Nanoscience* 2, 359-364 (2012). ISSN: 2190-5517.
- 8) **A. Deka**, R. C. Deka and A. Choudhury, Adsorption of CO on gas phase and zeolite supported gold monomers: a computational study, *Chem. Phys. Lett.* **490**, 184-188 (2010). ISSN No. 0009-2614.
- 9) R. C. Deka, **A. Deka** and A. Miyamoto, Density Functional Studies on the structure and reverse hydrogen spillover in  $\text{Au}_6$  cluster supported on zeolite, *Catalysis Letters*, **131**, 155-159 (2009). ISSN: 1011-372X.
- 10) **A. Deka** and R. C. Deka, Structural and Electronic Properties of Stable  $\text{Au}_n$  ( $n=2-13$ ) Clusters: A Density Functional Study, *J. Molecular Structure: THEOCHEM* **870**, 83-93 (2008). ISSN: 0166-1280.
- 11) M. Huix-Rotllant, **A. Deka**, S. I. Bosko, A. V. Matveev, L. V. Moskaleva and N. Rösch, Characterization of Optical Spectra of Interacting Systems: Application to Oxide-Supported Metal Clusters, *International Journal of Quantum Chemistry* **108**, 2978-2990 (2008). ISSN: 0020-7608 (Print) 1097-461X (Online)
- 12) P. Mondal, K. K. Hazarika, **A. Deka** and R. C. Deka, Density Functional Studies on Lewis Acidity of Alkaline Earth Metal Exchanged Faujasite Zeolite, *Molecular Simulation*, **34**, 1121-1128 (2008). ISSN: 0892-7022.

**In National Journals:**

- 1) R. C. Deka, S. Baruah, **A. Deka** and N. K. Gour, Theoretical insight of OH-initiated mechanistic pathways and kinetics of n-butyl nitrate(CH<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>ONO<sub>2</sub>) at 298 K and 1 atm, *Journal of the Indian Chemical Society*, **95**, 1-12 (2018). ISSN: 0019-4522.
- 2) R. C. Deka, P. Mondal, **A. Deka** and A. Miyamoto, DFT based reactivity descriptors to predict the influence of alkali cations on the Brønsted acidity of zeolites, *Bulletin of the Catalysis Society of India*, **8**, 140-155 (2009). ISSN: 2347-5382 (Online).

### Book Chapters:

- 1) Ramesh Ch. Deka and **Ajanta Deka**, Chapter 11, pg. 95-98 : “Sooner or Later Ethical Violations Get Exposed” in ACADEMIC INTEGRITY AND RESEARCH QUALITY, University Grants Commission, December, 2021
- 2) Ramesh Ch. Deka, Sudakshina Saikia, Nishant Biswakarma, Nand Kishor Gour and **Ajanta Deka**, Chapter 25, pg 511-528 : “Nanocatalysts for Exhaust Emissions Reduction” in NANOTECHNOLOGY IN THE AUTOMOTIVE INDUSTRY, Elsevier, April, 2022; Paperback ISBN: 9780323905244, eBook ISBN: 9780323905268
- 3) Ramesh Ch. Deka, Plaban J. Sarma, **Ajanta Deka**, Nishant Biswakarma, Dikshita Dowerah, Satyajit Dey Baruah, , “Mechanistic Details of Catalytic Hydrogenation of CO<sub>2</sub> to useful chemicals using SnO<sub>2</sub> clusters” in HETEROGENEOUS NANOCATALYSIS FOR ENERGY AND ENVIRONMENTAL SUSTAINIBILITY : VOLUME 2 – ENVIRONMENTAL APPLICATIONS, John Wiley & Sons, Inc, August, 2022, Chapter 25, pg 303-335, ISBN: 978-1-119-77202-6

### Research Experience:

- Doctoral thesis guided :
- Research & Consultancy Projects: 2 sponsored research projects completed as Principal Investigator.

| Sl. No | Title of the Project   | Sponsoring Agency | Duration                             | Status    |
|--------|--|-------------------|--------------------------------------|-----------|
| 1      | Geometries, stabilities and electronic properties of Ag doped gold nanoclusters: a density functional study. | AICTE, New Delhi  | 2 years (March, 2012 to March, 2014) | Completed |

|   |  |                 |                                     |           |
|---|--|-----------------|-------------------------------------|-----------|
| 2 | Theoretical Insight on Graphene sensor for small molecules | MHRD, New Delhi | 1.5 years (July, 2019<br>Jan, 2021) | Completed |
|---|--|-----------------|-------------------------------------|-----------|

Membership of Professional bodies: Life member of Assam Science Society

Award, Fellowship & Recognition: Fellowship by German National Science Foundation for carrying out doctoral research in Germany. (Duration – 6 months)

Date: 04/01/2023

Scanned Signature  
(Ajanta Deka)  
(Name)