Krishanu Ghosal

Creative, Team leader, Innovator

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EXPERIENCE

University of Calcutta,
Department of Polymer Science and Technology
Kolkata, 700009 — *JRF and SRF*

11/ 2016 – PRESENT (Ph.D) **(Ph.D; Successfully defended Ph.D synopsis defence in August 2020)**

Thesis title "**Synthesis of Biopolymers from Recyclable Municipal Plastic Waste and Natural resources for Tissue Regeneration**"

- ➔ Organic synthesis
- ➔ Polymer synthesis
- ➔ Nanomaterials synthesis
- ➔ Characterization
- ➔ Data processing
- ➔ Report and manuscript writing

Indian Institute of Science,
Inorganic and Physical Chemistry Department
Bangalore, 560012— *Project Assistant*

2/2016 - 5/2016 (4 months)

Worked on a project entitled "**Ground State Decomposition Mechanism of Metal contained Nitramine molecule**"

- ➔ Nanoparticle synthesis
- ➔ Computational chemistry

Hyderabad Central University,
School of Chemistry
Hyderabad, 500046 — *Summer Project Student*

6/2015 - 7/ 2015 (2 months)

Worked on a project entitled "**Synthesis of PNOA-Au and PNOA-Ag Thin Films at the Air-Solution Interface and Characterization**"

- ➔ Organic synthesis
- ➔ Polymer synthesis
- ➔ Fabrication of ultrathin film
- ➔ Characterization
- ➔ Report writing

EXPERTISE & SKILLS

1. UV-Visible spectrophotometer, FTIR, Bomb Calorimeter, Red Wood Viscometer, Photoluminescence Spectrophotometer, L B Trough, TGA, DSC, Rheometer, Glove box, DLS, Plate reader, UTM, Lyophilizer, SEM, TEM, XRD.

2. Origin software, GraphPad Prism, Image-J, Irfan View, Xpert Pro, MestReNova, ChemSketch, ChemDraw, EndNote, Microsoft word and powerpoint.

3. Polymer synthesis, characterization, nanomaterials synthesis, characterization, organic synthesis.

4. Cell culture experiments, Passaging, MTT Assay, Straining, Cell Fixation etc.

5. Report writing, Manuscript writing for publication

6. Leadership skills, Project management

AWARDS

1. Participated in Scientific Modelling Competition "**Eureka**" in "**Cultivision 2014**" organized by I.A.C.S and Win ***2nd prize*** by presenting a poster on "**Superior Catalytic Activity of Gold Nanorod-Carbon Dot Conjugate towards Reduction of Nitroarenes**".

2. ***Best poster award*** in "**Symposium on Polymer Science**" organised at IISER Kolkata on July 05-06, 2019.

3. ***International award winner (Gold medalist)*** for painting from **Japan**.

Hindustan National Glass,
Rishra, 712248— *Industrial Trainee*

10/2013 (1 month)

- ➔ Use of raw materials in glass manufacturing
- ➔ Chemical analysis of raw materials and finished glass
- ➔ Fabrication of glassware and quality control

EDUCATION

Ramakrishna Mission Vidyamandira, (Calcutta University) Belurmath, 711202
M.Sc. in ***Applied Chemistry***

8/2014 - 6/ 2016

Percentage of marks-75.416%

Ramakrishna Mission Vidyamandira, (Calcutta University) Belurmath, 711202
B.Sc. in ***Industrial Chemistry***

6/2011 – 5/2014

Percentage of marks-79.875%

Kanailal Vidyamandir (English Section),
Chandannagar, 712136

Higher Secondary (Science)

Percentage of marks-79.875%

Kanailal Vidyamandir (English Section),
Chandannagar, 712136

Secondary

Percentage of marks-82%

LANGUAGES

English, Hindi, Bengali

PUBLICATIONS

1) **Formation of a gold -carbon dot nanocomposite with superior catalytic ability for the reduction of aromatic nitro group in water**. ***RSC Advances***; 2014, 4, 25863-25866. Pritiranjan Mondal, **Krishanu Ghosal**, Swarup Krishna Bhattacharyya, Mithun Das, Abhijit Bera, Debabrata Ganguly, Pawan Kumar, Jaya Dwivedi, RK Gupta, Angel A Martí, Bipin Kumar Gupta and Subhabrata Maiti.

2) **Biopolymer Based Interfacial Tissue Engineering for Arthritis**. In Bingyun Li and Thomas Webster (Ed.) ***Orthopedic Biomaterials: Progress in Biology, Manufacturing and Industry Perspectives***, ***Springer USA***; 2018, 2, 67-88. **Krishanu Ghosal**, Rohit Khanna and Kishor Sarkar.

3) **Biomedical Applications of Graphene Nanomaterials and Beyond**. ***ACS Biomaterials Science and Engineering***; 2018, 8, 2653-2703. **Krishanu Ghosal** and Kishor Sarkar.

4) **Carbon dots: The next generation platform for biomedical applications**. ***Materials Science and Engineering: C***; 2019, 96, 887-903. **Krishanu Ghosal** and Ashis Ghosh.

5) **Green synthesis and characterization of silver nanoparticles using Belladonna Mother Tincture and its efficacy as a potential antibacterial and anti-inflammatory agent**. ***Materials Chemistry and Physics***; 2019, 228, 310-317. Pratik Das, **Krishanu Ghosal**, Nandan K Jana, Anwesha Mukherjee and Piyali Basak.

6) **Formation of Gold Nanorod-Carbon Dot Nanocomposite with Superior Catalytic Ability,** in International conference **Recent Advancement in Polymer Science & Technology (RAPT 2014)** (ISBN No: 978-81-925299-2-9 & Page No: 216). Department of Polymer Science & Technology, University of Calcutta.

7) **Dendrimer Functionalized Carbon Quantum Dot for Selective Detection of Breast Cancer and Gene Therapy**. ***Chemical Engineering Journal***; 2019, 373, 468-484. Santanu Ghosh, **Krishanu Ghosal**, Sk Arif Mohammad and Kishor Sarkar.

8) **Poly (ester amide) Derived from Municipal Polyethylene Terephthalate Waste Guided Stem Cell for Osteogenesis**. ***New Journal of Chemistry***; 2019, 43, 35, 14166-14178. **Krishanu Ghosal** and Kishor Sarkar.

9) **Facile green synthesis of bioresorbable polyester from soybean oil and recycled plastic waste for osteochondral tissue regeneration**. ***European polymer Journal***; 2020, 122, 109338. **Krishanu Ghosal,** Upama Bhattacharjee and Kishor Sarkar.

10) **Advances in Tissue Engineering and Regeneration**. In: Li B., Moriarty T., Webster T., Xing M. (eds) **Racing for the Surface**, ***Springer, Cham***; 2020, 1, 577-646. **Krishanu Ghosal,** Priyatosh Sarkar, Rima Saha, Shantanu Ghosh and Kishor Sarkar.

11) **Natural polysaccharide derived carbon dot based in situ facile green synthesis of silver nanoparticles: Synergistic effect on breast cancer**. ***International Journal of Biological Macromolecules*;** 2020, 162, 1605-1615. **Krishanu Ghosal**,† Santanu Ghosh,† Debjani Ghosh and Kishor Sarkar.

12) **In vivo bioresorbable shape memory polyester derived from recycled polycarbonate waste for tissue engineering**. (***Communicated***). **Krishanu Ghosal,** Shaipayan Pal and Kishor Sarkar.

13) **From ultrastiff to soft materials: Exploiting dynamic metal-ligand cross-links to access polymer hydrogels combining customized mechanical performance and tailorable functions by controlling hydrogel mechanics**. (***Communicated***). Agniva Dutta[1], **Krishanu Ghosal**[2], Kishor Sarkar[2], Debabrata Pradhan[1] and Rajat K. Das[1].

14) **Synthesis of Nonisocyanate based Poly(ester urethanes) from Recycled Poly(ethylene terephthalate) Waste and Oleic Acid for Tissue Engineering Application**. (***Manuscript under preparation***). **Krishanu Ghosal**,† Priyatosh Sarkar,† Debojit Chakraborty and Kishor Sarkar.

CONFERENCES

- ➔ Participated in ***APA 2017*** for Poster Presentation "**Soybean Oil and Recycled Polyethylene Terephthalate Waste Derived Biopolymer for Tissue Engineering Application**".
- ➔ Participated in ***BIOMET 2018*** at *VIT Vellore* for Poster Presentation "**Municipal Plastic Waste Derived Biopolymer for Bone-Cartilage Tissue Regeneration**".
- ➔ Participated in ***Symposium on Polymer Science 2019*** at *IISER Kolkata* for Poster Presentation "**Dendron Conjugated Carbon Quantum Dot for Selective Detection of Breast Cancer and Gene Therapy**".

➔ Participated in ***BIOTERM 2019*** at *IIT Kanpur* for Poster Presentation "**Poly(ester amide) derived from municipal polyethylene terephthalate waste guided stem cells for osteogenesis**".