

## Dr. Rajesh Kumar Prusty

### Assistant Professor

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[FRP Composite Lab link](#)



### 1. Education

- Ph.D. (2014 – 17) in Metallurgical and Materials Engineering from [NIT Rourkela](#).
- M.E. (2011 – 13) in Materials Engineering from [IISc Bangalore](#) with CGPA **7.9 (Out of 8)** – Rank 1 (*Gold medalist*).
- B.Tech (2006 – 10) in Metallurgical and Materials Engineering from [NIT Rourkela](#) with CGPA **9.19 (Out of 10)** – Rank 1 (*Silver medalist*).
- Intermediate (10+2) (2005) in Science from [BJB Junior College, Bhubaneswar](#) (Council of Higher Secondary Education, Orissa) with **92.22%**.
- Matriculation (10<sup>th</sup>) (2003) from Saraswati Vidya Mandir, Puri (Board of Secondary Education, Orissa) with **91.73%** - Rank 1 (*Silver medalist*)

### 2. Research Summary

- |   |                                   |
|---|-----------------------------------|
| • No. of SCI journal articles published: 40 | No. of Books published: 02        |
| • h-index: 18 (Google Scholar)              | 17 (Scopus) 16 (Web of Science)   |
| • Total citations: 1109 (Google Scholar)    | 915 (Scopus) 807 (Web of Science) |

### 3. Academic Achievements

- **All India Rank 1** in Metallurgical Engineering GATE 2011.
- Awarded **scholarship** of ₹1,00,000 for pursuing higher study by [JSL Stainless Ltd](#), Hisar, India.
- Awarded **K K Malik** award for being the **best graduate** from Materials Engineering (M.E.), [IISc, Bangalore](#) 2011-13 batch.
- Awarded **Silver Medal** for being the **first rank** holder from Metallurgical & Materials Engineering (B.Tech.), [NIT, Rourkela](#) 2006-10 batch.
- Secured a SGPA of **8/8** in 1st Semester during M.E. at [IISc, Bangalore](#).
- Secured a SGPA of **10/10** in 8th Semester during B.Tech. at [NIT, Rourkela](#).

- Awarded **Silver medal** for being the first rank holder in matriculation exam from school.

#### 4. Regular Reviewer of

- Composites Science and Technology (Elsevier)
- Construction and Building Materials (Elsevier)
- Composites Part A: Applied Science and Manufacturing (Elsevier)
- Chemical Engineering Journal (Elsevier)
- Journal of Adhesion Science and Technology (Taylor & Francis)
- Journal of Applied Polymer Science (Wiley)
- Polymer Composites (Wiley)
- Steel and Composite Structures (Techno-Press)

#### 5. Current Research Interests

- Development of nano-phased FRP Composites
- CNT alignment in fibrous polymeric composites
- Carbon fiber surface modification by Electrophoretic deposition
- Development of Advanced Fiber Metal Laminates (FMLs) for structural applications
- Development of FRP composite for ballistic applications
- Recycling and reuse of FRP Composites
- Durability analysis of FRP composites in various harsh and hostile environments
- Study of in-service environmental temperature effects on FRP Composites
- Sea water durability of FRP Composites

#### 6. Sponsored Projects

- iv. **Project Title:** Development of effective technical solutions for recycling of industrial FRP wastes and end-of-life FRP components

**Funding Agency:** Tata Steel

**Duration:** December, 2021 to December, 2024

**Role:** Principal Investigator

**Status:** Continuing

- iii. **Project Title:** Environmental impacts on the Mechanical, Thermal and Electrical performance of CNT embedded fibrous polymeric composites: Effects of through thickness CNT alignment

**Funding Agency:** Science and Engineering Research Board (SERB), Govt. of India.

**Duration:** March, 2019 to September, 2022

**Role:** Principal Investigator

**Status:** Continuing

- ii. **Project Title:** Moisture uptake kinetics and its subsequent effect on mechanical performance of nano-phased fibrous polymeric composites.

**Funding Agency:** Council of Scientific and Industrial Research (CSIR), Govt. of India.

**Duration:** August, 2017 to August, 2020

**Role:** Principal Investigator

**Status:** Completed

- i. **Project Title:** Effect of Hygrothermal conditioning and cycling on CNT embedded GFRP composite: A Study on marine environment durability

**Funding Agency:** Naval Research Board (NRB), DRDO, Govt. of India

**Duration:** November, 2016 to November, 2019

**Role:** Principal Investigator

**Status:** Completed

## 7. Consultancy Projects

- **Project Title:** A study of FRP (focus on carbon, glass and polymer fiber reinforcements) composites for structural applications in modern India: Feasibilities and Opportunities.

**Funding Agency:** TATA Steel.

**Duration:** October, 2016 to October, 2018.

**Role:** Co-consultant

**Status:** Completed

## 8. Courses Teaching/Taught

- Nanostructured Materials – Theory (UG)
- Joining of Metals – Theory (UG)
- Composite Materials – Theory (UG & PG)
- Polymer and Composite Materials – Lab (UG)
- Seminar and Technical Writing – Lab (UG)
- Phase Transformation laboratory (PG)
- Product Development laboratory (UG)

- Molecular Modelling of materials deformation behavior (UG)
- Engineering Metallurgy (UG)

## 9. Invited Lectures

- Delivered an invited talk on “An Introduction to Fiber Reinforced Polymer Composite and their Mechanical Behaviour” in the short term course organized by MNIT Jaipur during 22 – 26 September 2020.
- Speaker of the customized short term course conducted by TATA Steel Ltd. (New Materials Business) for its executives on “FRP Composites: An Introduction from Definition to Development” during 17 – 18 May, 2018 at Kolkata.
- Delivered a keynote lecture at National seminar on “Polymer Nanocomposites for Engineering Applications” organized at NIT, Rourkela held on 14<sup>th</sup> March, 2015.
- Delivered a keynote lecture on “Failure and Fracture behavior of Composite Materials” in the short term course “Deformation Behaviour and Fracture of Engineering Materials: Experimental and Simulations” organized by Dept. of Metallurgical and Materials Engineering, NIT Rourkela on 13<sup>th</sup> December, 2018.
- Delivered a keynote lecture on “Introduction to FRP Composites: A prospective material for aerospace applications” in the short term course “Aero-craft Processes and Aero-Materials” organized by Dept. of Metallurgical and Materials Engineering, NIT Rourkela on 27<sup>th</sup> May, 2019.

## 10. Academic Experience

- Presently continuing as an **Assistant Professor** in Metallurgical and Materials Engineering dept. at [NIT, Rourkela](#) since March 2014.
- Served Mechanical Engineering dept., [KIIT University](#), Bhubaneswar as an **Assistant Professor** for 8 months during July 2013 – Feb 2014

## 11. Industrial Experience

- Served [JSL Stainless Ltd](#), Hisar, India as a Graduate Engineer Trainee (**GET**) for one year during July 2010- June 2011.

Responsibilities assigned during the job period:

- Costing.

- Analysis of casting defects and possible remedial measures.
- Optimization of processing parameters of Steel Melting Shop.
- Maximization of Chromium and Manganese recovery in Steel Melting Shop.
- Analysis of feasibility of new grade processing.

## 12. Past Research Experience

- Ph.D. thesis (2017): **Implication of CNT Fillers on Environmental Durability of GFRP Composites: An Evaluation of Microstructural Features and Mechanical Properties** at [NIT, Rourkela](#) under supervision of [Prof. B C Ray](#).
- Master's degree (2013): **Nanoindentation of Ni-gyroids** at [IISc, Bangalore](#) under supervision of [Prof. U Ramamurty](#) (*FNAE, FASc, FNA, FTWAS, Shanti Swarup Bhatnagar awardee-2011*).

## 13. Books Published

2. B.C. Ray, **R.K. Prusty**, D. Nayak, Phase Transformations and Heat Treatments of Steels, CRC Press, Boca Raton, 2020. <https://doi.org/10.1201/9780429019210>.
1. B.C. Ray, **R.K. Prusty**, D.K. Rathore, Fibrous Polymeric Composites: Environmental Degradation and Damage, CRC Press, Boca Raton, 2018. <https://doi.org/10.1201/9780429506314>.

## 14. Book Chapters Published

2. B.N.V.S.G.G. K, K.K. Mahato, **R.K. Prusty**, B.C. Ray, Challenges of Adhesively Bonded Joints and Their Advantages over Mechanical Fastening, in: Fail. Fibre-Reinf. Polym. Compos., CRC Press, 2021. <https://doi.org/10.1201/9781003128861>
1. A.O. Fulmali, S.K. Ramamoorthy, **R.K. Prusty**, Functionalization of Carbon Nanotube, in: J. Abraham, S. Thomas, N. Kalarikkal (Eds.), Handb. Carbon Nanotub., Springer International Publishing, Cham, 2020: pp. 1–41. [https://doi.org/10.1007/978-3-319-70614-6\\_63-1](https://doi.org/10.1007/978-3-319-70614-6_63-1).

## 15. Publications in SCI Journals

40. S. Dasari, S. Lohani, **R.K. Prusty**, An assessment of mechanical behavior of glass fiber/epoxy composites with secondary short carbon fiber reinforcements, J. Appl. Polym. Sci. 139 (2022) 51841. <https://doi.org/10.1002/app.51841>.

39. P.K. Gangineni, S.S. Dash, B.N.V.S. Ganesh Gupta K, **R.K. Prusty**, B.C. Ray, Effect of Post-Cathodic EPD Acetone Washing of Carbon Fibres on the Mechanical Properties of Graphene Carboxyl Embedded CFRP Composites, *Trans. Indian Inst. Met.* (2022). <https://doi.org/10.1007/s12666-022-02551-3>.
38. B.N.V.S. Ganesh Gupta K, B. Sen, M.M. Hiremath, **R.K. Prusty**, B.C. Ray, Enhanced creep resistance of GFRP composites through interpenetrating polymer network, *Int. J. Mech. Sci.* 212 (2021) 106728. <https://doi.org/10.1016/j.ijmecsci.2021.106728>.
37. P.K. Gangineni, S. Patnaik, **R.K. Prusty**, B.C. Ray, Mechanical behavior of electrophoretically modified CFRP composites at elevated temperatures: An assessment of the influence of graphene carboxyl bath concentration, *J. Appl. Polym. Sci.* 138 (2021) 51365. <https://doi.org/10.1002/app.51365>.
36. S. De, P. n. Shivangi, S. Choudhury, A.O. Fulmali, B.C. Ray, **R.K. Prusty**, Effects of fiber surface grafting by functionalized carbon nanotubes on the interfacial durability during cryogenic testing and conditioning of CFRP composites, *J. Appl. Polym. Sci.* 138 (2021) 51231. <https://doi.org/10.1002/app.51231>.
35. A.O. Fulmali, B. Sen, B.A. Nayak, **R.K. Prusty**, Effect of repeated hydrothermal cycling on the durability of glass fiber/epoxy composites with and without carbon nanotube reinforcement, *Polym. Compos.* n/a (n.d.). <https://doi.org/10.1002/pc.26293>.
34. P.K. Gangineni, S. Patnaik, B.N.V.S.G. Gupta K., **R.K. Prusty**, B.C. Ray, Interfacial behavior of graphene carboxyl-grafted carbon fiber reinforced polymer composites at elevated temperatures: Emphasis on the effect of electrophoretic deposition time, *Polym. Compos.* n/a (n.d.). <https://doi.org/10.1002/pc.26269>.
33. S. Dasari, S. Lohani, P.K. Gangineni, **R.K. Prusty**, Effects of Cryogenic Aging on Flexural Behavior of Advanced Inter-ply Hybrid Fiber-Reinforced Polymer Composites, *Trans. Indian Inst. Met.* 74 (2021) 2171–2183. <https://doi.org/10.1007/s12666-021-02288-5>.
32. S. De, A.O. Fulmali, K.C. Nuli, **R.K. Prusty**, B.G. Prusty, B.C. Ray, Improving delamination resistance of carbon fiber reinforced polymeric composite by interface engineering using carbonaceous nanofillers through electrophoretic deposition: An assessment at different in-service temperatures, *J. Appl. Polym. Sci.* 138 (2021) 50208. <https://doi.org/10.1002/app.50208>.

33. S. Dasari, S. Saurabh, **R.K. Prusty**, Temperature and loading speed sensitivity of glass/carbon inter-ply hybrid polymer composites on tensile loading, *J. Appl. Polym. Sci.* 138 (2021) 49928. <https://doi.org/10.1002/app.49928>.
30. S. Gupta, **R.K. Prusty**, B.C. Ray, S. Pal, Strength degradation and fractographic analysis of carbon fiber reinforced polymer composite laminates with square / circular hole using scanning electron microscope micrographs, *J. Appl. Polym. Sci.* 138 (2021) 49878. <https://doi.org/10.1002/app.49878>.
29. A. Anand, S.K. Ghosh, A.O. Fulmali, **R.K. Prusty**, Enhanced barrier, mechanical and viscoelastic properties of graphene oxide embedded glass fibre/epoxy composite for marine applications, *Constr. Build. Mater.* 268 (2021) 121784. <https://doi.org/10.1016/j.conbuildmat.2020.121784>.
28. B.N.V.S. Ganesh Gupta K, M.M. Hiremath, B.C. Ray, **R.K. Prusty**, Improved mechanical responses of GFRP composites with epoxy-vinyl ester interpenetrating polymer network, *Polym. Test.* 93 (2021) 107008. <https://doi.org/10.1016/j.polymertesting.2020.107008>.
27. B.N.V.S. Ganesh Gupta K, M.M. Hiremath, **R.K. Prusty**, B.C. Ray, Development of advanced fiber-reinforced polymer composites by polymer hybridization technique: Emphasis on cure kinetics, mechanical, and thermomechanical performance, *J. Appl. Polym. Sci.* 137 (2020) 49318. <https://doi.org/10.1002/app.49318>.
26. A. Anand, S.K. Ghosh, **R.K. Prusty**, Effects of seawater absorption and desorption on the long-term creep performance of graphene oxide embedded glass fiber/epoxy composites, *Polym. Compos.* 41 (2020) 4861–4871. <https://doi.org/10.1002/pc.25758>.
25. **R.K. Prusty**, R.L. Narayan, M. Scherer, U. Steiner, V.S. Deshpande, N.A. Fleck, U. Ramamurty, Spherical indentation response of a Ni double gyroid nanolattice, *Scr. Mater.* 188 (2020) 64–68. <https://doi.org/10.1016/j.scriptamat.2020.07.011>.
24. S. Yandrapu, P.K. Gangineni, S.K. Ramamoorthy, B.C. Ray, **R.K. Prusty**, Effects of electrophoretic deposition process parameters on the mechanical properties of graphene carboxyl-grafted carbon fiber reinforced polymer composite, *J. Appl. Polym. Sci.* 137 (2020) 48925. <https://doi.org/10.1002/app.48925>.
23. S. Patnaik, P.K. Gangineni, **R.K. Prusty**, Influence of cryogenic temperature on mechanical behavior of graphene carboxyl grafted carbon fiber reinforced polymer

- composites: An emphasis on concentration of nanofillers, *Compos. Commun.* 20 (2020) 100369. <https://doi.org/10.1016/j.coco.2020.100369>.
22. A.O. Fulmali, B. Sen, B.C. Ray, R.K. Prusty, Effects of carbon nanotube/polymer interfacial bonding on the long-term creep performance of nanophased glass fiber/epoxy composites, *Polym. Compos.* 41 (2020) 478–493. doi: [10.1002/pc.25381](https://doi.org/10.1002/pc.25381).
21. R. Kattaguri, A.O. Fulmali, R.K. Prusty, B.C. Ray, Effects of acid, alkaline, and seawater aging on the mechanical and thermomechanical properties of glass fiber/epoxy composites filled with carbon nanofibers, *J. Appl. Polym. Sci.* 137 (2020) 48434. doi: [10.1002/app.48434](https://doi.org/10.1002/app.48434).
20. P.K. Gangineni, S. Yandrapu, S.K. Ghosh, A. Anand, **R.K. Prusty**, B.C. Ray, Mechanical behavior of Graphene decorated carbon fiber reinforced polymer composites: An assessment of the influence of functional groups, *Compos. Part Appl. Sci. Manuf.* 122 (2019) 36–44. doi:[10.1016/j.compositesa.2019.04.017](https://doi.org/10.1016/j.compositesa.2019.04.017).
19. S.S.R. Nomula, D.K. Rathore, B.C. Ray, **R.K. Prusty**, Creep performance of CNT reinforced glass fiber/epoxy composites: Roles of temperature and stress, *J. Appl. Polym. Sci.* 136 (2019) 47674. doi:[10.1002/app.47674](https://doi.org/10.1002/app.47674).
18. A. Anand, P. Banerjee, D. Sahoo, D.K. Rathore, **R.K. Prusty**, B.C. Ray, Effects of temperature and load on the creep performance of CNT reinforced laminated glass fiber/epoxy composites, *Int. J. Mech. Sci.* 150 (2019) 539–547. doi:[10.1016/j.ijmecsci.2018.09.048](https://doi.org/10.1016/j.ijmecsci.2018.09.048).
17. P.N. Harshita, D.K. Rathore, **R.K. Prusty**, B.C. Ray, Extrapolation of Mechanical Strengthening Effect in Nanoclay/Epoxy Nanocomposites to Elevated Temperature Environments, *Trans. Indian Inst. Met.* 71 (2018) 2015–2024. doi:[10.1007/s12666-018-1334-8](https://doi.org/10.1007/s12666-018-1334-8).
16. S.K. Ghosh, P. Rajesh, B. Srikavya, D.K. Rathore, **R.K. Prusty**, B. Chandra Ray, Creep behavior prediction of multi-layer graphene embedded glass fiber/epoxy composites using time-temperature superposition principle, *Compos. Part Appl. Sci. Manuf.* 107 (2018) 507–518. doi:[10.1016/j.compositesa.2018.01.030](https://doi.org/10.1016/j.compositesa.2018.01.030).
- 15 **R.K. Prusty**, D.K. Rathore, B.C. Ray, Water-induced degradations in MWCNT embedded glass fiber/epoxy composites: An emphasis on aging temperature, *J. Appl. Polym. Sci.* 135 (2018) 45987. doi:[10.1002/app.45987](https://doi.org/10.1002/app.45987).



14. **R.K. Prusty**, D.K. Rathore, B.C. Ray, Evaluation of the role of functionalized CNT in glass fiber/epoxy composite at above- and sub-zero temperatures: Emphasizing interfacial microstructures, *Compos. Part Appl. Sci. Manuf.* 101 (2017) 215–226. doi:[10.1016/j.compositesa.2017.06.020](https://doi.org/10.1016/j.compositesa.2017.06.020).
13. S.K. Ghosh, **R.K. Prusty**, D.K. Rathore, B.C. Ray, Creep behaviour of graphite oxide nanoplates embedded glass fiber/epoxy composites: Emphasizing the role of temperature and stress, *Compos. Part Appl. Sci. Manuf.* 102 (2017) 166–177. doi:[10.1016/j.compositesa.2017.08.001](https://doi.org/10.1016/j.compositesa.2017.08.001).
12. D.K. Rathore, **R.K. Prusty**, B.C. Ray, Mechanical, thermomechanical, and creep performance of CNT embedded epoxy at elevated temperatures: An emphasis on the role of carboxyl functionalization, *J. Appl. Polym. Sci.* 134 (2017). doi:[10.1002/app.44851](https://doi.org/10.1002/app.44851).
11. **R.K. Prusty**, S.K. Ghosh, D.K. Rathore, B.C. Ray, Reinforcement effect of graphene oxide in glass fibre/epoxy composites at in-situ elevated temperature environments: An emphasis on graphene oxide content, *Compos. Part Appl. Sci. Manuf.* 95 (2017) 40–53. doi:[10.1016/j.compositesa.2017.01.001](https://doi.org/10.1016/j.compositesa.2017.01.001).
10. **R.K. Prusty**, D.K. Rathore, S. Sahoo, V. Parida, B.C. Ray, Mechanical behaviour of graphene oxide embedded epoxy nanocomposite at sub- and above- zero temperature environments, *Compos. Commun.* 3 (2017) 47–50. doi:[10.1016/j.coco.2017.02.003](https://doi.org/10.1016/j.coco.2017.02.003).
9. D.K. Rathore, **R.K. Prusty**, S.C. Mohanty, B.P. Singh, B.C. Ray, In-situ elevated temperature flexural and creep response of inter-ply glass/carbon hybrid FRP composites, *Mech. Mater.* 105 (2017) 99–111. doi:[10.1016/j.mechmat.2016.11.013](https://doi.org/10.1016/j.mechmat.2016.11.013).
8. **R.K. Prusty**, D.K. Rathore, B.C. Ray, CNT/polymer interface in polymeric composites and its sensitivity study at different environments, *Adv. Colloid Interface Sci.* 240 (2017) 77–106. doi:[10.1016/j.cis.2016.12.008](https://doi.org/10.1016/j.cis.2016.12.008).
7. D.K. Rathore, B.P. Singh, S.C. Mohanty, **R.K. Prusty**, B.C. Ray, Temperature dependent reinforcement efficiency of carbon nanotube in polymer composite, *Compos. Commun.* 1 (2016) 29–32. doi:[10.1016/j.coco.2016.08.002](https://doi.org/10.1016/j.coco.2016.08.002).
6. M.J. Shukla, D.S. Kumar, D.K. Rathore, **R.K. Prusty**, B.C. Ray, An assessment of flexural performance of liquid nitrogen conditioned glass/epoxy composites with multiwalled carbon nanotube, *J. Compos. Mater.* 50 (2016) 3077–3088. doi:[10.1177/0021998315615648](https://doi.org/10.1177/0021998315615648).

5. **R.K. Prusty**, D.K. Rathore, B.P. Singh, S.C. Mohanty, K.K. Mahato, B.C. Ray, Experimental optimization of flexural behaviour through inter-ply fibre hybridization in FRP composite, *Constr. Build. Mater.* 118 (2016) 327–336. doi:[10.1016/j.conbuildmat.2016.05.054](https://doi.org/10.1016/j.conbuildmat.2016.05.054).
4. D.K. Rathore, **R.K. Prusty**, D.S. Kumar, B.C. Ray, Mechanical performance of CNT-filled glass fiber/epoxy composite in in-situ elevated temperature environments emphasizing the role of CNT content, *Compos. Part Appl. Sci. Manuf.* 84 (2016) 364–376. doi:[10.1016/j.compositesa.2016.02.020](https://doi.org/10.1016/j.compositesa.2016.02.020).
3. **R.K. Prusty**, D.K. Rathore, M.J. Shukla, B.C. Ray, Flexural behaviour of CNT-filled glass/epoxy composites in an in-situ environment emphasizing temperature variation, *Compos. Part B Eng.* 83 (2015) 166–174. doi:[10.1016/j.compositesb.2015.08.035](https://doi.org/10.1016/j.compositesb.2015.08.035).
2. G.R. Krishna, R. Devarapalli, **R. Prusty**, T. Liu, C.L. Fraser, U. Ramamurty, C.M. Reddy, Structure-mechanical property correlations in mechanochromic luminescent crystals of boron difluoride dibenzoylmethane derivatives, *IUCrJ.* 2 (2015). doi:[10.1107/S2052252515015134](https://doi.org/10.1107/S2052252515015134).
1. **R.K. Prusty**, P. Kuruva, U. Ramamurty, T. Thomas, Correlations between mechanical and photoluminescence properties in Eu doped sodium bismuth titanate, *Solid State Commun.* 173 (2013) 38–41. doi:[10.1016/j.ssc.2013.09.002](https://doi.org/10.1016/j.ssc.2013.09.002).

## 16. Conference Presentations & Publications

38. Shubham, C.S. Yerramalli, **R.K. Prusty**, B.C. Ray, Through-Thickness High Strain Rate Compressive Response of Glass/Epoxy-Laminated Composites Embedded with Randomly Oriented Discontinuous Carbon Fibers, in: K. Jonnalagadda, A. Alankar, N.J. Balila, T. Bhandakkar (Eds.), *Adv. Struct. Integr.*, Springer, Singapore, 2022: pp. 103–111. [https://doi.org/10.1007/978-981-16-8724-2\\_10](https://doi.org/10.1007/978-981-16-8724-2_10).
39. S.S. Dash, P.K. Gangineni, B.N.V.S.G.G. K, S. Dasari, **R.K. Prusty**, B.C. Ray, Evaluation of mechanical behaviour of graphene oxide grafted CFRP composites: a comparison of anodic and cathodic EPD, *Adv. Mater. Process. Technol.* 0 (2021) 1–9. <https://doi.org/10.1080/2374068X.2021.1945272>.
36. S. Mohanty, Shubham, **R.K. Prusty**, B.C. Ray, Investigation of Elastic Properties of Rutile Titanium Dioxide from First Principles, in: S. Pal, D. Roy, S.K. Sinha (Eds.), *Process.*

- Charact. Mater. Sel. Proc. CPCM 2020, Springer, Singapore, 2021: pp. 203–210. [https://doi.org/10.1007/978-981-16-3937-1\\_21](https://doi.org/10.1007/978-981-16-3937-1_21).
37. S. Lohani, S. Dasari, S.S. Dash, **R.K. Prusty**, B.C. Ray, An Assessment of Wettability of Glass/Epoxy Composites Modified with CNT and MLG, in: S. Pal, D. Roy, S.K. Sinha (Eds.), Process. Charact. Mater. Sel. Proc. CPCM 2020, Springer, Singapore, 2021: pp. 147–155. [https://doi.org/10.1007/978-981-16-3937-1\\_15](https://doi.org/10.1007/978-981-16-3937-1_15).
34. S. Dasari, S. Lohani, S. Sumit Dash, A. Omprakash Fulmali, **R. K. Prusty**, B. Chandra Ray, A novel study of flexural behavior of short glass fibers as secondary reinforcements in GFRP composite, Mater. Today Proc. 47 (2021) 3370–3374. <https://doi.org/10.1016/j.matpr.2021.07.161>.
35. A. Omprakash Fulmali, B. Arnimesh Nayak, B.N.V.S. Ganesh Gupta K, S. Dasari, **R. K. Prusty**, B. Chandra Ray, Effect of 1D carbon nano- tube and fiber reinforcement on the long-term creep performance of glass fiber/epoxy composite using the time-temperature superposition principle, Mater. Today Proc. 47 (2021) 3263–3268. <https://doi.org/10.1016/j.matpr.2021.06.451>.
33. S. Gupta, S. Dasari, S. Pal, **R.K. Prusty**, B.C. Ray, Assessment of open hole flexural strength and progressive damage mechanism of CFRP composite as a function of stacking sequence, Int. J. Mater. Prod. Technol. 62 (2021) 80–95. <https://doi.org/10.1504/IJMPT.2021.115202>.
32. S. Lohani, Shubham, **R.K. Prusty**, B.C. Ray, Effect of ultraviolet radiations on interlaminar shear strength and thermal properties of glass fiber/epoxy composites, Mater. Today Proc. 43 (2021) 524–529. <https://doi.org/10.1016/j.matpr.2020.12.028>.
31. B. Ganesh Gupta K, M.M. Hiremath, A.O. Fulmali, **R.K. Prusty**, B.C. Ray, Multimaterial laminated composites: An assessment of effect of stacking sequence on flexural response, Mater. Today Proc. 44 (2021) 141–145. <https://doi.org/10.1016/j.matpr.2020.08.547>.
30. S. Dasari, S. Saurabh, K.K. Mahato, **R.K. Prusty**, B. Chandra Ray, Mechanical properties of glass/carbon inter-ply hybrid polymer composites at different in-situ temperatures, Mater. Today Proc. 39 (2021) 1192–1197. <https://doi.org/10.1016/j.matpr.2020.03.555>.
29. K.C. Nuli, A.O. Fulmali, B. Sen, K.K. Mahato, **R.K. Prusty**, B.C. Ray, Synergetic Impact of carbon nanotube and/or graphene reinforcement on the mechanical performance of

- glass fiber/epoxy composite, in: Mater. Sci. Forum, Trans Tech Publ, 2020: pp. 284–290.  
<https://doi.org/10.4028/www.scientific.net/MSF.978.284>
28. S. Dasari, S. Saurabh, S. Gupta, B.C. Ray, **R.K. Prusty**, Experimental amelioration of flexural behavior under cryogenic conditioning through inter-ply fiber hybridization in FRP composites, Mater. Today Proc. 27 (2020) 1618–1624.  
<https://doi.org/10.1016/j.matpr.2020.03.336>.
27. K. Kumar Mahato, D. Kumar Rathore, K. Dutta, **R. K. Prusty**, B. Chandra Ray, Effect of severely thermal shocked nano-Al<sub>2</sub>O<sub>3</sub> filled glass fiber reinforced polymeric composites: An assessment on tensile, thermal and morphological behaviour, Mater. Today Proc. 33 (2020) 5521–5525. <https://doi.org/10.1016/j.matpr.2020.03.334>.
26. S. De, A.O. Fulmali, P.N. Shivangi, S. Choudhury, **R.K. Prusty**, B.C. Ray, Interface modification of carbon fiber reinforced epoxy composite by hydroxyl/carboxyl functionalized carbon nanotube, Mater. Today Proc. 27 (2020) 1473–1478.  
<https://doi.org/10.1016/j.matpr.2020.02.970>.
25. S. Patnaik, P.K. Gangineni, B.C. Ray, **R.K. Prusty**, Effect of graphene-based nanofillers addition on the interlaminar performance of CFRP composites: An assessment of cryo-conditioning, Mater. Today Proc. 33 (2020) 5070–5075.  
<https://doi.org/10.1016/j.matpr.2020.02.846>.
24. S. Patnaik, P.K. Gangineni, A. Panda, **R.K. Prusty**, B.C. Ray, Interlaminar performance of graphene carboxyl modified CFRP composites: Effect of cryogenic conditioning, Mater. Today Proc. 27 (2020) 1516–1521. <https://doi.org/10.1016/j.matpr.2020.03.166>.
23. S. Saurabh, S. Dasari, B. Chandra Ray, **R. K. Prusty**, Mode I interlaminar fracture toughness improvement of the glass/epoxy composite by using multiscale composite approach, Mater. Today Proc. 33 (2020) 5328–5333.  
<https://doi.org/10.1016/j.matpr.2020.03.023>.
22. M.M. Hiremath, B.N.V.S. Ganesh Gupta K, **R.K. Prusty**, B.C. Ray, Mechanical and thermal performance of recycled glass fiber reinforced epoxy composites embedded with carbon nanotubes, Mater. Today Proc. 33 (2020) 5029–5034.  
<https://doi.org/10.1016/j.matpr.2020.02.838>.

21. A. Jena, Shubham, **R.K. Prusty**, B.C. Ray, Mechanical and thermal behaviour of multi-layer graphene and nanosilica reinforced glass Fiber/Epoxy composites, Mater. Today Proc. 33 (2020) 5184–5189. <https://doi.org/10.1016/j.matpr.2020.02.879>.
20. B.A. Nayak, Shubham, **R.K. Prusty**, B.C. Ray, Effect of nanosilica and nanoclay reinforcement on flexural and thermal properties of glass fiber/epoxy composites, Mater. Today Proc. 33 (2020) 5098–5102. <https://doi.org/10.1016/j.matpr.2020.02.852>.
19. A. Yadav, B.N.V.S. Ganesh Gupta K, A.O. Fulmali, **R.K. Prusty**, B.C. Ray, Effect of cure kinetics and nanomaterials on glass fiber/vinyl ester composites: An assessment on mechanical, thermal and fracture morphology, Mater. Today Proc. 33 (2020) 4937–4941. <https://doi.org/10.1016/j.matpr.2020.02.683>.
18. B. Sen, A.O. Fulmali, B.N.V.S.G. Gupta K, **R.K. Prusty**, B.C. Ray, A study of the effect of carbon nanotube/nanoclay binary nanoparticle reinforcement on glass fibre/epoxy composites, Mater. Today Proc. 26 (2020) 2026–2031. <https://doi.org/10.1016/j.matpr.2020.02.440>.
17. B.N.V.S. Ganesh Gupta K, M.M. Hiremath, B. Sen, **R.K. Prusty**, B.C. Ray, Influence of loading rate on adhesively bonded Tin-glass/epoxy single lap joint, Mater. Today Proc. 26 (2020) 1850–1854. <https://doi.org/10.1016/j.matpr.2020.02.406>.
16. B.N.V.S. Ganesh Gupta K, M.M. Hiremath, A.O. Fulmali, **R.K. Prusty**, B.C. Ray, Investigation of adhesively bonded multi-material joints: An assessment on joint efficiency and fracture morphology, Mater. Today Proc. 27 (2020) 1180–1185. <https://doi.org/10.1016/j.matpr.2020.02.074>.
15. M.M. Hiremath, B.N.V.S. Ganesh Gupta K, B. Sen, **R.K. Prusty**, B.C. Ray, Effect of in-situ temperature variation on mechanical response of glass/vinyl ester composites, Mater. Today Proc. (2020). <https://doi.org/10.1016/j.matpr.2020.01.595>.
14. B.N.V.S. Ganesh Gupta K, A. Yadav, M.M. Hiremath, **R.K. Prusty**, B.C. Ray, Enhancement of mechanical properties of glass fiber reinforced vinyl ester composites by embedding multi-walled carbon nanotubes through solution processing technique, Mater. Today Proc. (2020). <https://doi.org/10.1016/j.matpr.2020.01.391>.
13. Shubham, **R. K. Prusty**, B. Chandra Ray, Mechanical modelling and experimental validation of woven composites, Mater. Today Proc. (2019). <https://doi.org/10.1016/j.matpr.2019.11.082>.

12. D.K. Rathore, **R.K. Prusty**, B.C. Ray, An Assessment of Mechanical Performance of CNF Modified Glass Fiber/Epoxy Composites under Elevated Temperatures, in: Mater. Sci. Forum, Trans Tech Publ, 2020: pp. 311–315. <https://doi.org/10.4028/www.scientific.net/MSF.978.311>
11. S. Yandrapu, P.K. Gangineni, S. De, B.C. Ray, **R.K. Prusty**, Effect of Bath Concentration during Electrophoretic Deposition on the Interfacial Behaviour of Hybrid CFRP Composites, in: Mater. Sci. Forum, Trans Tech Publ, 2020: pp. 304–310. <https://doi.org/10.4028/www.scientific.net/MSF.978.304>
10. K.K. Mahato, K.C. Nuli, K. Dutta, **R.K. Prusty**, B.C. Ray, Thermal shock effect of nano-TiO<sub>2</sub> enhanced glass fiber reinforced polymeric composites: An assessment on tensile and thermal behavior, in: Mater. Sci. Forum, Trans Tech Publ, 2020: pp. 277–283. <https://doi.org/10.4028/www.scientific.net/MSF.978.277>
9. A.O. Fulmali, R. Kattaguri, K.K. Mahato, **R.K. Prusty**, B.C. Ray, Effect of CNT addition on cure kinetics of glass fiber/epoxy composite, IOP Conf. Ser. Mater. Sci. Eng. 338 (2018) 012003. <https://doi.org/10.1088/1757-899X/338/1/012003>.
8. A. Anand, P. Banerjee, **R.K. Prusty**, B.C. Ray, Lifetime Prediction of Nano-Silica based Glass Fibre/Epoxy composite by Time Temperature Superposition Principle, IOP Conf. Ser. Mater. Sci. Eng. 338 (2018) 012020. <https://doi.org/10.1088/1757-899X/338/1/012020>.
7. K.K. Mahato, A.O. Fulmali, R. Kattaguri, K. Dutta, **R.K. Prusty**, B.C. Ray, Effect of severely thermal shocked MWCNT enhanced glass fiber reinforced polymer composite: An emphasis on tensile and thermal responses, IOP Conf. Ser. Mater. Sci. Eng. 338 (2018) 012057. <https://doi.org/10.1088/1757-899X/338/1/012057>.
6. B.P. Singh, D.K. Rathore, S.C. Mohanty, **R.K. Prusty**, B.C. Ray, In-situ Elevated Temperature Mechanical Performance of MWCNT/epoxy Nanocomposite, Sens. Transducers. 210 (2017) 17.
5. K.K. Mahato, D.K. Rathore, **R.K. Prusty**, K. Dutta, B.C. Ray, Tensile behavior of MWCNT enhanced glass fiber reinforced polymeric composites at various crosshead speeds, IOP Conf. Ser. Mater. Sci. Eng. 178 (2017) 012006. <https://doi.org/10.1088/1757-899X/178/1/012006>.

4. K.K. Mahato, M. Biswal, D.K. Rathore, **R.K. Prusty**, K. Dutta, B.C. Ray, Effect of loading rate on tensile properties and failure behavior of glass fibre/epoxy composite, IOP Conf. Ser. Mater. Sci. Eng. 115 (2016) 012017. <https://doi.org/10.1088/1757-899X/115/1/012017>.
3. S.C. Mohanty, B.P. Singh, K.K. Mahato, D.K. Rathore, **R.K. Prusty**, B.C. Ray, Water absorption behavior and residual strength assessment of glass/epoxy and glass-carbon/epoxy hybrid composite, IOP Conf. Ser. Mater. Sci. Eng. 115 (2016) 012029. <https://doi.org/10.1088/1757-899X/115/1/012029>.
2. M.J. Shukla, D.S. Kumar, K.K. Mahato, D.K. Rathore, **R.K. Prusty**, B.C. Ray, A comparative study of the mechanical performance of Glass and Glass/Carbon hybrid polymer composites at different temperature environments, IOP Conf. Ser. Mater. Sci. Eng. 75 (2015) 012002. <https://doi.org/10.1088/1757-899X/75/1/012002>.
1. D.S. Kumar, M.J. Shukla, K.K. Mahato, D.K. Rathore, **R.K. Prusty**, B.C. Ray, Effect of post-curing on thermal and mechanical behavior of GFRP composites, IOP Conf. Ser. Mater. Sci. Eng. 75 (2015) 012012. <https://doi.org/10.1088/1757-899X/75/1/012012>.

## 17. Thesis Supervision

### Ongoing

<b>Pavan Kumar Gangineni</b> (Ph.D.) – Thesis Submitted	Mechanical Behavior of Graphene Nanofiller Grafted Carbon Fiber Reinforced Polymer Composites	Co-Supervisor
<b>Srinivasu Dasari</b> (Ph.D.) – Thesis to be submitted tentatively by June 2022	An assessment of mechanical behaviour of hybrid FRP composites at different environments and loading speeds	Supervisor
<b>Abhinav Omprakash Fulmali</b> (Ph.D.) – Advanced Stage	Environmental durability analysis of nanophased FRP composite: Emphasis on nanofiller functionalization and alignment	Supervisor

<b>Shubham</b> (Ph.D.) – Advanced Stage	High Strain Rate Experimental Testing and Numerical Modelling of Laminated Structural Composites	Co-Supervisor
<b>BNVS Ganesh Gupta K</b> (Ph.D.) – Advanced Stage	Development of advanced structural fiber metal laminates through polymer hybridization and nanofiller incorporation approaches	Co-Supervisor
<b>Bibhu Prasanna Sahoo</b> (Ph.D.) – Literature Survey continuing	Multiscale FRP Composites with improved interfacial bonding for cryogenic applications	Supervisor

### Completed

- **PG: M.Tech/Dual degree Thesis**

S. No.	Name and Roll No.	Thesis Title	Year	Role
23	<b>Soumya Sumit Dash</b> (219MM1408)	Effect of fibre polarity during electrophoretic deposition of graphene oxide on carbon fibre and evaluation of mechanical behaviour of composite	2021	Supervisor
22	<b>Ritupurna Sahoo</b> (716MM1117)	Durability Analysis Of Single Lap Joint FRP Composites Using Carbon Nanotube Reinforced Epoxy Adhesives At Different Temperatures	2021	Co-Supervisor
21	<b>Satyaroop Patnaik</b> (715MM1108)	Interlaminar performance of cryogenically conditioned CFRP composites modified by graphene based nanofillers via electrophoretic deposition	2020	Supervisor
20	<b>Avadesh Yadav</b> (218MM1257)	Mechanical properties of CNT embedded fiber reinforced polymer composite at various temperatures: A comparative	2020	Supervisor



		analysis through different processing techniques		
19	<b>Bhaskar Sen</b> (715MM1154)	Techniques to enhance the mechanical properties of carbon nanotube embedded glass fibre reinforced epoxy composites	2020	Co-Supervisor
18	<b>Hiremath Mritunjay M</b> (218MM1253)	Mechanical Characterization of nano titania reinforced Fiber Metal Laminates for Structural Applications	2020	Co-Supervisor
17	<b>Sushant Saurabh</b> (218MM1479)	Enhancement in Mode I interlaminar fracture toughness of glass/epoxy composites by using multiscale composite approach	2020	Co-Supervisor
16	<b>Sagar Yandrapu</b> (217MM1417)	Effect of bath concentration and current during electrophoretic deposition process on the properties of CFRP composite	2019	Supervisor
15	<b>Nagesh Krishna</b> (714MM1100)	Nano Silica hybridized Graphene Oxide: Suitability analysis for reinforcing FRP composites	2019	Supervisor
14	<b>Nuli Krishna Chaitanya</b> (217MM1360)	Evaluation of mechanical, thermal properties and water uptake kinetics of Pristine and Functionalized Carbon nanotube incorporated glass fiber reinforced epoxy composite under different harsh environments	2019	Co-Supervisor
13	<b>Soubhik De</b> (714MM1131)	Interphase Modification of CFRP composite by Electrophoretic deposition by carbon based nanofillers and its impact at different service temperatures	2019	Co-Supervisor
12	<b>Abhijeet Anand</b> (713MM1109)	Graphene oxide embedded GFRP composites: A feasibility study for Marine applications	2018	Supervisor

11	<b>Abhinav O.Fulmali</b> (216MM1430)	Effect of CNT/CNT-COOH addition on Creep performance and water absorption behaviour of embedded glass fiber/epoxy composites	2018	Supervisor
10	<b>Kattaguri Rani</b> (216MM1426)	Resistance of CNF modified glass fiber/epoxy composites towards various corrosive fluids	2018	Co-Supervisor
9	<b>Poulami Banerjee</b> (713MM1132)	Development of multi-scale GFRP composites using Nano-silica functionalized Graphene oxide	2018	Co-Supervisor
8	<b>Sohan Kumar Ghosh</b> (712MM1117)	Flexural and creep performance of graphene oxide reinforced glass fiber/epoxy composite at elevated temperatures	2017	Supervisor
7	<b>Sai Seetha Ram Nomula</b> (712MM1168)	Durability assessment of Carbon nano tubes embedded glass fiber reinforced polymer composites at elevated temperature and different corrosive environments	2017	Co-Supervisor
6	<b>Debaraj Sahoo</b> (215MM1242)	Effect of Humid Ageing on the Durability of Functionalized CNT Embedded GFRP Composite	2017	Supervisor
5	<b>Pradeep Kumar Biswal</b> (215MM1425)	Mechanical Performance of Glass/Carbon Hybrid Polymer Composites under Cryogenic Temperature and Humid Environments	2017	Co-Supervisor
4	<b>Bhanu Pratap Singh</b> (214MM2361)	Mechanical performance evaluation of carbon nanotube reinforced polymer nanocomposites at above ambient temperature environments	2016	Supervisor

3	<b>Sarat Chandra Mohanty</b> (214MM1340)	Development of CNT modified GFRP composite and assessment of its elevated temperature mechanical performance	2016	Co-Supervisor
2	<b>Devalingam Santhosh Kumar</b> (213MM1470)	new generation fibre reinforced polymer composites for low and cryogenic temperature applications	2015	Supervisor
1	<b>Meet Jayesh Shukla</b> (213MM1474)	Elevated temperature performance of hybrid polymer composites	2015	Co-Supervisor

- **UG: B.Tech Thesis**

S. No.	Name and Roll No.	Thesis Title	Year	Role
23	<b>Supreet Mohanty</b> (117MM0626)	Investigation of Elastic Properties of Titanium Dioxide from First principles	2021	Supervisor
22	<b>Shiny Lohani</b> (117MM0619)	Mechanical Behavior of Glass/Epoxy composites modified with MWCNT and MLG	2021	Supervisor
21	<b>Bandi Manohar</b> (117MM0622)	Effect of Aluminium Powder Addition on the Thermal Behaviour of Short Carbon Fibre Reinforced Epoxy Composites	2021	Supervisor
20	<b>B Arnimesh Nayak</b> (117MM0629)	Effect of Matrix Modification and Alignment Techniques on the mechanical properties of FRP Composite	2021	Supervisor
19	<b>Ankush Gautam</b> (117MM0688)	Effect of Cure Parameters on Vinyl ester Polymer	2021	Co-Supervisor
18	<b>Lavudya Saikiran</b> (116MM0545)	FRP Strengthened Steel Structures	2020	Supervisor

17	<b>Kathula Padma Nayani</b> (116MM0536)	Mechanical Characterisation of Adhesively Bonded Lap Joints: An Assessment on Adhesive Types and Testing Temperature	2020	Co-Supervisor
16	<b>P.N.Shivangi</b> (115MM0476)	Experimental investigation on the effect of nano-fillers on the carbon fibre modified through Electrophoretic deposition	2019	Supervisor
15	<b>Vinit Kumar Agarwalla</b> (115MM0477)	Assessment of severely thermal shock conditioning of nano TiO <sub>2</sub> enhanced glass fiber/epoxy composites at various loading rate	2019	Supervisor
14	<b>Shashwat Alok</b> (115MM0657) <b>Himanshu Shekhar</b> (115MM0659)	Fabrication of Single Lap Joint and determination of the effect of adhesive thickness on the lap shear strength of the joint	2019	Supervisor
13	<b>Saswat Choudhury</b> (115MM0482)	Enhancement in Properties and Performance of advanced FRP composites to be used in structural applications through fiber modification	2019	Co-Supervisor
12	<b>Chaganti S Sarat</b> <b>Chandra</b> (114MM0642) <b>Ganesh</b> <b>Arepalli</b> (114mm0500)	Effect of Hydrothermal cycling on mechanical properties of Glass fibre/Epoxy composites with and without CNT	2018	Supervisor
11	<b>Soubhagya Kumar Nayak</b> (114MM0263) <b>Ankit Adarsha Patra</b> (114MM0264)	Effect of Freeze-thaw cycling on properties of CNT reinforced glass epoxy composite	2018	Co-Supervisor

10	<b>Akula Gayatri Sri Anjani</b> (113MM0435) <b>Arunesh Kumar Pandey</b> (113MM0456)	Effect of Loading Rate and Temperature on Mechanical Performance of CNT Modified Glass Epoxy Fiber Reinforced Composite	2017	Supervisor
9	<b>Dipesh Divyanshu</b> (113MM0443)	Cryogenic performance of Nano-Silica embedded Glass Fibre Reinforced Polymer composite	2017	Supervisor
8	<b>Ashika Agrawal</b> (113MM0434) <b>Bata Krishna Giri</b> (113MM0445)	Flexural and Creep behavior of CNF enhanced GFRP composites at different temperatures	2017	Co-Supervisor
7	<b>Tanmay Mahendra Goswami</b> (113MM0602)	Effect of Nano-Silica reinforcement on mechanical behaviour of GFRP composites at different temperatures	2017	Co-Supervisor
6	<b>Swastik Somaray Mashyal</b> (112MM0407)	Role of environmental temperature on the mechanical behaviour of 0.5 wt % carbon nano fiber modified epoxy nanocomposite and glass fibre reinforced composite	2016	Supervisor
5	<b>Sweta Sahoo</b> (112MM0419) <b>Varsha Parida</b> (112MM0413)	Elevated Temperature Performance of Carbon Nanotube Modified Epoxy Nanocomposites	2016	Supervisor
4	<b>Jyoti Prakash</b> (112MM0387) <b>Philkhana Naga Harshita</b> (112MM0499)	Role of environmental temperature on the mechanical behaviour of Nanoclay modified epoxy composite	2016	Co-Supervisor
3	<b>Brajesh Ranjan</b> (112MM0385)	Mechanical performance of epoxy with varying content of carbonaceous nano-filler at elevated temperature	2016	Co-Supervisor

2	<b>Hem Shruti Bhardwaj</b> (111MM0357) <b>Prangya Paramita Sahoo</b> (111MM0378)	Environmental Study of Nano-Filler Embedded Fiber Reinforced Polymer Composite	2015	Co-Supervisor
1	<b>Abhisek Agrawalla</b> (111MM0264) <b>Namrata Keshri</b> (111MM0365)	Durability Assessment of Multiwalled Carbon-Nanotubes Modified Advanced Fibrous Polymeric Composite in Different Marine Environment	2015	Co-Supervisor