

Report on research collaboration

between

Dr. Rajat Kanti Nath, Department of Mathematical Sciences, Tezpur University

and

**Dr. Sunil Kumar Prajapati, School of Basic Sciences, Indian Institute of Technology,
Bhubaneswar, India**

Title of collaboration:

On the number of solutions of a generalized commutator equation in finite groups

Summary of collaboration:

A collaborative research work was undertaken by Dr. Rajat Kanti Nath and Dr. Sunil Kumar Prajapati with the aim to study the number of solutions of a generalized commutator equation in finite groups. The main emphasis in this work was to consider some generalized commutator equations in a finite group and show that the number of solutions of such equations are characters of that group. Expertise and resources from both the collaborators were put together to come up with explicit formula for this character, considering the equation $[\dots[[[x_1, x_2], x_3], x_4], \dots, x_n] = g$, for some well-known classes of finite groups in terms of orders of the group, its center and its commutator subgroup. The collaboration was mostly restricted in online mode with exchange of ideas and results over electronic mode of communication.

Duration of collaboration:

The collaboration started in the month **February, 2017** and culminated in the form of a published research paper in the month of **August, 2018**.

Details of collaboration:

Details of collaboration could be found in the article:

On the number of solutions of a generalized commutator equation in finite groups, Acta Mathematica Hungarica, vol. 156, no. 1, p. 18--37, 2018.

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