**Personal Profile**

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| **C:\Users\user\Desktop\photo-NS.jpg** |  | **Dr. Nipen Saikia** | |
| **Associate Professor, Department of Mathematics** | |
| **Rajiv Gandhi University, Rono Hills, Doimukh** | |
| **Arunachal Pradesh-791112** | |
|  | |
| **Email:** | [**nipen.saikia@rgu.ac.in**](mailto:nipen.saikia@rgu.ac.in) |
|  | [**nipennak@yahoo.com**](mailto:nipennak@yahoo.com) |
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| **Phone No.:** | **+91 9435507484** |

**Educational Profile**

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| --- | --- |
| Ph.D. | Tezpur University, Tezpur, Assam; 2007  Supervisor: Prof. Nayandeep Deka Baruah |
| M. Sc. | Tezpur University, Tezpur, Assam; 2002  Subject: Mathematical Sciences  Specialization: Number Theory; Operator Theory |
| B. Sc. | Jawaharlal Nehru College, Pasighat, Arunachal Pradesh; 2000  Subject: Mathematics |

**Professional Experience**

|  |  |
| --- | --- |
| **Associate Professor**, Department of Mathematics,  Rajiv Gandhi University, Arunachal Pradesh, India. | August 11, 2020-till date |
| **Assistant Professor (Level 12)**  Department of Mathematics,  Rajiv Gandhi University, Arunachal Pradesh, India. | August 11, 2017-August 10, 2020 |
| **Assistant Professor (Level 11)**  Department of Mathematics,  Rajiv Gandhi University, Arunachal Pradesh, India. | August 11, 2012-August 10, 2017 |
| **Assistant Professor (Level 10)**  Department of Mathematics,  Rajiv Gandhi University, Arunachal Pradesh, India. | August 11, 2008-August 10, 2012 |

**Administrative Experience**

|  |  |
| --- | --- |
| **Head of Department**, Department of Mathematics, Rajiv Gandhi University, Arunachal Pradesh, India. | September 1, 2020- till date |

**Awards &Honours**

1. **Gold Medal** in B. Sc. Mathematics (Honours) 2000, Arunachal University (present Rajiv Gandhi University), Doimukh,, Arunachal Pradesh, India.
2. **Vice-Chancellors Gold Medal**, 2000, Arunachal University (present Rajiv Gandhi University), Doimukh, Arunachal Pradesh, India.
3. **Gold Medal** in M. Sc. Mathematical Sciences 2002, Tezpur University, Tezpur, Assam, India.

**Membership of Professional Bodies**

1. Life Member of Indian Mathematical Society, India (2011- till date)
2. Life Member of Assam Academy of Mathematics, India (2010-till date)

**Research Interests**

**Number Theory (Ramanujan’s Mathematics) & Special Functions, especially**

* Theta-functions
* Continued fractions
* Modular equations
* Class invariants
* Q-series
* Partition theory of numbers

**Research Publications**

1. Some new quartic modular equations in Ramanujan’s alternative theory of signature 4: Chetry, J. ; Saikia, N.; *The Journal of Analysis*, **2021**, <https://doi.org/10.1007/s41478-021-00366-x>
2. Iterative method to find approximate solution of system of integral equations via generalized Meir–Keeler condensing operator: [Das](https://link.springer.com/article/10.1007/s40863-021-00255-y#auth-Anupam-Das), A.; Hazarika, B.; Saikia, N.; Mahato, N. K.; [*São Paulo Journal of Mathematical Sciences*](https://link.springer.com/journal/40863),  **2021,** <https://doi.org/10.1007/s40863-021-00255-y>
3. Modular identities and dissections of continued fractions of order thirty-two: Chetry, J. ; Saikia, N.; [*São Paulo Journal of Mathematical Sciences*](https://link.springer.com/journal/40863),  **2021,** <https://doi.org/10.1007/s40863-021-00253-0>
4. Arithmetic properties for (r, s)-regular partition functions with distinct parts: Drema, R.; Saikia, N.; *Rendiconti di Matematica e delle Sue Applicazioni****,* 2022,***43*, 23 – 35.
5. Combinatorial interpretations of q-series using n-color partitions: Rana, M; Saikia, N.; Journal of the Ramanujan Mathematical Society, **2021,** 36(2), 123–127.
6. Partition-Theoretic Interpretations of some q-series identities of Ramanujan: Saikia, N.; Kuwait Journal of Science, **2021,** *48* (2), 488-498.
7. General congruences modulo 5 and 7 for colour partitions: Saikia, N.; Boruah, C.; *The Journal of Analysis,* **2021,** *29*,  917–926.
8. New theta function identities for a continued fraction of Ramanujan and their applications: Boruah, C.; Saikia, N.; *Afrika Matematika,* **2021,**  *32*, 241–251.
9. Some congruences for overpartitions with restriction: Srvastava, H. M.; Saikia, N.; *Mathematiical Notes***, 2020**, *107***,** 488-498.
10. Infinite Families of congruences for 3-regular partitions with distinct odd parts: Saikia, N., [*Communications in Mathematics and Statistics*](https://link.springer.com/journal/40304), **2020,** *8*, 443-451.
11. Some new modular equations in Ramanujan’s alternate theory of signature 3: Saikia, N.; Chetry, J.; *The Ramanujan Journal,* **2019*,***  *50* (1), 163-194.
12. New infinite families of congruences modulo 3, 5 and 7 for overpartition function: : Chetry, J.; Saikia, N.; *Journal of the Ramanujan Mathematical Society,* **2019**, *34*(4), 417-426.
13. Some congruences modulo 3, 5 and 7 for broken -diamond partitions for {3, 25, 49} and odd positive integer: Saikia, N.; Chetry, J.; *Journal of Mathematical Analysis and Applications*, **2018,** [*406*(2)](https://www.sciencedirect.com/science/journal/0022247X/460/2), 645-655.
14. Infinite families of congruences modulo 7 for Ramanujan's general partition function: Saikia, N.; Chetry, J.; *Annales Mathématiques du Québec,* **2018,** *42*(1), 127-132.
15. Some new explicit values of Ramanujan–Selberg continued fraction: Saikia, N.; Boruah, C.; *Afrika Matematika*, **2018,** *28*(7-8), 1131–1141.
16. New congruences for *k*-tuples *t*-core partitions: Saikia, N.; Boruah, C.;[*The Journal of Analysis*](https://link.springer.com/journal/41478)*,* **2018,** *26*(1), 27-37.
17. Congruences for -regular overpartition for : Saikia, N.; Boruah, C.; *Indian Journal of Pure and Applied Mathematics*, **2018,** *48*(2), 295-308.
18. Some results on a special case of a general continued fraction of Ramanujan: Saikia, N.; Boruah, C.; *Annali dell' Università di Ferrara,* **2018*,*** *64*(1), 165–183.
19. Arithmetic properties of partitions of 5 and 7 tuples with odd parts distinct: Saikia, N.; Boruah, C.; *Palestine Journal of Mathematic,***2018,** *7*(1), 141–150.
20. Congruences of -regular partition triples for : Saikia, N.; Boruah, C.; *Acta Mathematica Vietnamica****.* 2017***, 42* [(3)](https://link.springer.com/journal/40306/42/3/page/1), 551-561.
21. New theorems on explicit evaluation of a parameter of Ramanujan’s function*:* Saikia, N.; Chetry, N.; *Notes on Number Theory and Discrete Mathematics*, **2017,** *23* (1), 7-18.
22. Some congruences modulo 2 and 5 for bipartition with 5-core: Saikia, N.; Boruah, C.;*Arab Journal of Mathematical Sciences*, **2017,** [*23*(2)](https://www.sciencedirect.com/science/journal/13195166/23/2), 124-132.
23. Congruences for bipartition and partition triples with 4-core: Saikia, N.; Boruah, C.; *Afrika Matematika,* **2017*,*** *28*(1-2), 199-206.
24. Some congruences of a restricted bipartition function ): Saikia, N.; Boruah, C.; *International Journal of Analysis,*  ***2016****, 2016*, Article ID 9037692, 1-7.
25. New theta-function identities and general theorems for the explicit evaluations of Ramanujan’s continued fractions: Saikia, N.; [*Arabian Journal of Mathematics*](https://link.springer.com/journal/40065). **2016,** *5*(3), 145-158.
26. Some new identities for a continued fraction of Ramanujan: Saikia, N.; *Annali dell' Università di Ferrara.* **2016***, 62*(1), 151-164.
27. A connection between the modular *j*−invariant and the Ramanujan’s cubic continued fraction: Saikia, N.; *Palestine Journal of Mathematic.*  **2016,** *5*(1), 127–130.
28. Some properties, explicit evaluations, and applications of Ramanujan’s remarkable product of theta-functions: Saikia, N.; *Acta* *Mathematica Vietnamica*. **2016,** *41*, 133-142.
29. General theorem for explicit evaluations and reciprocity theorems for Ramanujan-Gollnitz-Gordon continued fraction: Saikia, N.; *Kyungpook Mathematical Journal.* **2015,** *55*, 983-996.
30. Two theta-function identities for the Ramanujan–Selberg continued fraction and applications: Saikia, N.; *Journal of Number Theory,* ***2015***, *151*, 46-53.
31. Some *q*-continued fractions of Ramanujan, their explicit values, and equalities: Saikia, N.;  *Afrika Matematika.*, **2015,** *26*, 1359-1370.
32. A new continued fractions of Ramanujan, it’s modular identities and explicit evaluations: Saikia, N.; *Afrika Matematika*, **2015,** *26*(3), 407-417.
33. Some new explicit values of quotients of Ramanujan’s theta-functions and continued fractions: Saikia, N*.; International Journal of Mathematics and Mathematical Sciences,* **2014**. *2014*, Article ID 534376, 1-8.
34. New general theorems and explicit values of the level 13 analogue of Rogers-Ramanujan continued fraction: Saikia, N.; *Journal of Numbers,* **2014,** *2014*, Article ID 162759, 1-6.
35. Some new explicit values of the parameters and connected with Rogers–Ramanujan continued fraction and applications: Saikia, N.; *Afrika Matematika,* **2014,**  *25*(4), 961-973.
36. Ramanujan's Schlafli-type modular equations and class invariants: Saikia, N.; *Functiones et Approximatio, Commentarii Mathematici,* **2013**, *49*(2), 201-409.
37. Some new general theorems for the explicit evaluations of Rogers-Ramanujan continued fraction: Saikia, N.; *Computational Methods Function Theory*, **2013,** *13*(4), 597-611.
38. Some new explicit values of quotients of theta-function  and applications to Ramanujan’s continued fractions: Saikia, N.;  *Journal of Complex Analysis,* **2013,**  *2013*, Article ID 538592, 1-8 .
39. Some new explicit values of parameters and of quotients of eta-function: Saikia, N.; *ISRN Computational Mathematics*, 2013, *2013*, Article ID 435261, 1-8.
40. A product of theta-functions analogous to Ramanujan's remarkable product of theta-functions and applications: Saikia, N.; *Journal of Mathematics****,* 2013**, *2013*, Article ID 620756, 1-6.
41. Parametric evaluations of Ramanujan’s singular moduli: Saikia, N.; *Arab Journal of Mathematical Sciences*, **2013,** *19*(1), 1-10**.**
42. A parameter for Ramanujan’s function: Its explicit values and applications: Saikia, N.; *ISRN Computational Mathematics*,  **2012**, *2012*, Article ID 169050, 1-14.
43. Modular identities and explicit evaluations of a continued fraction of Ramanujan: Saikia, N.;  *International Journal of Mathematics and Mathematical Sciences*, **2012**, *2012*, Article ID 694251, 1-11.
44. Modular identities and explicit values of a new continued fraction of Ramanujan: Saikia, N.; *Global Journal of Mathematical Sciences: Theory and Practical*,  **2012**, *4*(3), 245-248.
45. Explicit evaluations of cubic and quartic theta-functions: Saikia, N.; *ISRN Discrete Mathematics*, **2012**,*2012*, Article ID 956594, 1-29.
46. New modular identities and general formulas for explicit evaluations of a continued fraction of order six: Saikia, N.; *Global Journal of Pure and Applied Mathematics*, **2012,** *8*(1), 39-47.
47. A new parameter for Ramanujan’s theta-functions and explicit values: Saikia, N.; *Arab Journal of Mathematical Sciences*. **2012,** *18*(2), 105–119.
48. Ramanujan’s modular equations and Weber-Ramanujan class-invariants and : Saikia, N.; *Bulletin of Mathematical Sciences*, **2012,**. *2*(1), 205–223.
49. On modular identities of the Ramanujan-Gollnitz-Gordon continued fraction: Saikia, N.; *Far East Journal of Mathematical Sciences*, **2011,** *54*(1), 65-79.
50. Modular identities and explicit values of a continued fraction of order twelve: Saikia, N.;  *JP Journal of Algebra, Number Theory and Applications*, **2011,** *22*(1), 127-154.
51. Some new identities for Ramanujan’s theta-function and applications: Saikia, N.; *Far East Journal of Mathematical Sciences*, **2010,** *44*(2), 167-179.
52. Some New Proofs of modular relations for the Gollnitz-Gordon functions: Baruah, N. D.; Bora, J.; Saikia, N.; *The Ramanujan Journal*, **2008,** *15*(2), 281–301.
53. Explicit evaluations of Ramanujan-Gollnitz-Gordon continued fraction: Baruah, N. D.; Saikia, N.; *Monatshefte fur Mathematik*,  **2008,** *154*(4), 271–288.
54. Two parameters for Ramanujan’s theta-functions and their explicit values: Baruah, N. D.; Saikia, N.; *Rocky Mountain Journal of* *Mathematics*,  **2007,** *37*(6), 1747–1790.
55. Modular equations and explicit values of Ramanujan-Selberg continued fraction: Baruah, N. D.; Saikia, N.; *International Journal of Mathematics and Mathematical Sciences*, **2006,** *2006*, Article ID 54901, 1-16.
56. Some new explicit values of Ramanujan’s continued fractions: Baruah, N. D.; Saikia, N.; *Indian Journal of Mathematics*,  **2004,** *46*(2-3), 197–222.
57. Some general theorems on the explicit evaluations of Ramanujan’s cubic continued fraction. *Journal of Computational and Applied Mathematics,* **2003,** *160*(1-2), 37–51.

**Book/Book Chapter published**

1. Saikia, N.: Partition theory of numbers and Ramanujan’s general partition function, in *Deliberations on advances in physical, mathematical and computational sciences*, Eds. Arasu; J. G. V.; Darbari, M., , St. Aloysius College (Autonomous), Madhya Pradesh, India, 2020, pp. 37-44.
2. Chetry, J. & Saikia, N.: Congruences modulo 3 and 5 for Ramanujan’s partition function, in *Mathstatika*, Eds. Hazarika, P. & Handique, L., Madhabdev University, Assam, India, 2020, pp. 365-373.
3. Saikia, N.: Explicit values of Ramanujan’s theta-functions and remarkable product of theta-functions: A review, in *Recent scientific research,* Eds. Saikia, N. & Hazarika, N. J., THB College, Sonitpur, Assam, 2020, pp. 1-10.
4. Saikia, N.: *Elementary number theory for beginners*, Research India Publication, New Delhi, India, 2014.

**Research guidance**

**Ph. D. Scholar**

1. **Ms. Rinchin Drema**

Topic of research : Arithmetic properties of certain partition functions.

Year of Ph. D. degree: Ongoing

1. **Mr. Riyajur Rahman**

Topic of research : Study of divisibility properties of partition and related using q-series identities.

Year of Ph. D. degree: Ongoing

1. **Mr. Jubaraj Chetry**

Title of the thesis : Ramanujan’s continued fractions, modular equations and

related topics

Year of Ph. D. degree : 2019

Present occupation : Assistant Professor, Department of Mathematics, Paschim Dhemaji College, Assam-787053, India.

1. **Mrs. Chayanika Boruah**

Title of the thesis : Contribution to Ramanujan’s continued fractions, partition theory and related topics.

Year of Ph. D. degree : 2018

Present occupation : Assistant Professor, Department of Mathematics, University of Science and Technology,

Meghalaya-793101, India.

**Course/Conference/Workshop organized**

* 1. Student development programme on ‘Basics of R-Programming’ by Department of Mathematics, Rajiv Gandhi University, Arunachal Pradesh, and Spoken Tutorial Project IIT Bombay, India.

Duration: 23 September-29 September, 2021

Role: Convener

* 1. Workshop on ‘Basics of C and C++ Programming’ by Department of Mathematics, Rajiv Gandhi University, Arunachal Pradesh and Spoken Tutorial Project IIT Bombay, India.

Duration: 15 July-19 July, 2020

Role: Convener

**Course/Conference/Workshop etc. attended**

1. Delivered an invited talk in ‘Srinivasa Ramanujan and some of his mathematics & application of mathematics in economics’ a National Level Webinar held at Department of Mathematics & Economics, Kakojan College, Jorhat, Assam, India on July 19, 2021.

Title of the talk: Srinivasa Ramanujan and some of his mathematics.

1. Delivered an invited talk in ‘One week online workshop on research methodology and academic publication: special focus on use of scientific tools and software’ a National Level Workshop held at Bahona College, Jorhat, Assam, India during June 3 – June 19, 2021.

Title of the talk: Advance software for research: *Mathematica* software.

1. Delivered an invited talk in ‘Advanced Number Theory-2020 (NWANT- 2020)’ a National Level Webinar held at School of Mathematics, Gangadhar Meher University, Sambalpur, Odisha, India during November 16- November 20, 2020.

Title of the talk: Integer partition and congruences.

1. Delivered an oral presentation in ‘International Conference on Advances in Mathematics, Science and Technology (ICAMST-2020),’ an International Conference held at Department of Mathematics, Rajiv Gandhi University, Rajiv Gandhi University, Arunachal Pradesh, India during September 1-September, 3, 2020.

Title of the presentation: Level 13 analogue of Rogers-Ramanujan continued fraction.

1. Delivered an invited talk in ‘Seven Days FDP on LaTeX: Aesthetic of Scientific Documentatio,’ a National Level Faculty Development Programme held at Depatment of Mathematics and Computer Science, Bahona College, Jorhat, Assam, India during August 7 –August 13, 2020.

Title of the talk: Basics of Latex, referring and indexing, and mathematical symbols.

1. Delivered an oral presentation in ‘Online International Conference on Advances in Physical, Mathematical & Computational Sciences’ an International Conference’ an International Conference held at Faculty of Physical Sciences, St. Aloysius College (Autonomous), Jabalpur, Madhya Pradesh, India during June12-June 13, 2020.

Title of the presentation: Congruences modulo prime for Ramanujan's general partition

function.

1. Delivered an invited talk in ‘Conference on Number Theory, Combinatorics & Special Functions (NTCSF 2019) & Symposium on Applied Mathematics & Engineering Applications, a National conference held at School of Mathematics, Thapar Institute of Engineering & Technology, Patiala, Punjab, India during October 11-October 12, 2019.

Title of the talk: A new special case of a general continued fraction of Ramanujan.

1. Delivered an invited talk in ‘International at Conference on Number Theory and Graph Theory (ICNG2019)’, an International conference held at Department of Studies in Mathematics, University of Mysore, Manasagangotri, Mysuru-570006, India during June 27-June-29, 2019.

Title of the talk: Modular equations in Ramanujan’s alternative theories.

1. Delivered an oral presentation in ‘International Conference Mathematics and Its Applications’ an International Conference held at Department of Mathematics, The University of Burdwan, Burdwan, West Bengal, India during February 15-February 17, 2018.

Title of the presentation: New congruences for -regular overpartition for ∈ {5, 6, 8}.

1. Delivered an oral presentation in ‘2nd National Conference on Recent Trends of Mathematics and its Applications’ a National Conference held at Department Department of Mathematics, Rajiv Gandhi University, Arunachal Pradesh, India during November 6-November 7, 2015.

Title of the presentation: New identities for Ramanujan-Selberg continued fraction.

1. Delivered an invited talk in ‘Applications on MATLAB and MATHEMATICA’, UGC Sponsored National Workshop held at Depatment of Mathematics and Computer Science, Bahona College, Jorhat, Assam, India during April 27-May 3, 2015.

Title of the presentation: Applications of *Mathematica* software.

1. Delivered an oral presentation in ‘International Conference on Frontiers in Mathematics-2015’ an International Conference held at Department of Mathematics, Gauhati University, Assam, India during March 26-March 28, 2015.

Title of the presentation: Some identities of a continued fraction of Ramanujan.

1. Delivered an oral presentation in ‘National Conference on Recent Trends of Mathematics and its Applications, a National Conference held at Department of Mathematics, Rajiv Gandhi University, Arunachal Pradesh., India during May 26- May 27, 2014.

Title of the presentation: A new continued fraction of Rogers-Ramanujan-type

1. Delivered an oral presentation in ‘International Conference on Recent Advances in Mathematical Statistics and Its Applications in Applied Sciences’ an International Conference held at Department of Mathematics, Gauhati University, Assam, India during December 31, 2012-January 2, 2013.

Title of the presentation: Ramanujan’s Schlafli-type modular equations and class invariants.

1. Delivered an oral presentation in ‘The Legacy of Srinivasa Ramanujan’ an International Conference held at University of Delhi, New Delhi, India, during December 17- December 22, 2012.

Title of the presentation: Some new continued fractions of Ramanujan, their explicit values and

equalities.

1. Delivered an oral presentation in ‘2nd National Conference on Mathematical Analysis and its Applications’ a National Conference held by Department of Mathematics, Tripura University, Agartala, Tripura. India, during April 5 –April 6, 2012.

Title of the presentation: Some modular identities and explicit evaluations of a new continued

fraction of Ramanujan.

1. Delivered an oral presentation in ‘National Conference on Frontiers in Mathematics’ a National Conference held at Department of Mathematics, Gauhati University, Guwahati, Assam, India, during September 29-September 30, 2011.

Title of the presentation: Some eta-function identities and new Weber-Ramanujan class invariants.

**Sponsored Project**

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| --- | --- | --- | --- |
| **Title of the project** | **Funding agency** | **Year of sanction** | **Role** |
| Contribution to Ramanujan’s Continued Fractions and Related Topics | Council of Scientific & Industrial Research (CSIR), India  **Grant:** 25(0241)/15/EMR-II | 2015 | PI |
| Weber-Ramanujan Class Invariants, Continued Fractions and Related Topics | University Grants Commission (UGC), India  **Grant:** F. No. 41-394/2012(SR) | 2012 | PI |