

## **Faculty Profile of Dr. N. Annapoorani**



**Dr. N. Annapoorani**  
**Assistant Professor**  
**Department of Mathematics**

Email: [pooranimaths@buc.edu.in](mailto:pooranimaths@buc.edu.in)

Phone No: 0422 2428413

### **Research Area**

- Abstract Differential Equations
- Stochastic Differential Equations
- Partial Differential Equations

### **Education & Career**

#### **Education**

##### **Ph.D.**

Subject : Mathematics

Institution : Bharathiar University, Coimbatore

Affiliated University : Bharathiar University

Year of Award : 2010

**M.Phil.,**

Subject : Mathematics

Institution : Gandhigram Rural Institute

Affiliated University : Gandhigram Rural Institute

Year of Award : 2006

**M.Sc.,**

Subject: Mathematics

Institution : Vivekananda Arts and Science College(W)

Affiliated University : Periyar University

Year of Award : 2005

**B.Sc.,**

Subject: Mathematics

Institution: NKR Arts and Science College for Women

Affiliated University: Periyar University

Year of Award: 2002

## **Career**

### **At Bharathiar University (Reverse Order)**

Assistant Professor : October 2015 to Till Date

### **Past Experience**

Assistant Professor: February 2013 to October 2015 at King College of Technology

Assistant Professor: September 2010 to May 2011 at Karunya University

## **Awards**

## **Membership**

## **Membership in Professional Bodies**

1. Indian Mathematical Society, Life member.
2. Indian Society of Industrial and Applied Mathematics, Life member.

## **Visits**

## **Collaborators**

## **Others**

## **Projects**

### Funded Projects (National Level)

- [Ongoing](#)
- [Completed](#)

Ongoing Projects List with necessary Information

Completed Projects List with necessary Information

### Consultancy Projects

- [Ongoing](#)
- [Completed](#)

Ongoing Consultancy Project Informations

Completed Consultancy Project Informations

## Research Guidance

- [Post Doc.](#)
- [Ph.D.](#)
- [M.Phil.](#)
- [M.Sc.](#)
- [Tab 5 Name](#)

Ongoing

Title

Name

Completed

Title

Name

Ongoing

S.No	Student Name
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1.	R. Saranya
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2.	D. Prabu
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3.	N. Keerthana
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Completed

<b>Sl No.</b>	<b>Name of the candidate</b>	<b>Title of the Thesis</b>	<b>Year</b>
1.	A.Akilandeeswari	Solvability of Certain Fractional Partial Differential Equations,	2018
2.	P. Umamaheswari	Existence and Stability of Solutions of Stochastic Fractional Differential Equations,	2019
3.	P. Suresh Kumar	Studies on Controllability and Stability of Fractional Langevin Dynamical Systems,	2019
4.	A. Haseena	Studies on Large Deviation Principles of Nonlinear Stochastic Differential Equations,	2019
5.	B. Kamalapriya	Existence of Solutions of Fractional Integrodifferential Equations with Nonlocal Conditions,	2021
6.	C. Kausika	Existence Results and Stability Analysis of Fractional Integrodifferential Equations,	2023

Ongoing

**Sl. No.    Name of the candidate.**

Completed

<b>Sl. No.</b>	<b>Name of the candidate</b>	<b>Title of the Thesis</b>	<b>Year</b>
1.	V. Gowthami	On The Solutions of Fractional Differential Equations Using Adomian Decomposition Method	2016
2.	R. Kowsalya	Existence of Solutions of Fractional Differential Equations With Integral Boundary Conditions	2016

3. C. Priya Dharsini Analysis Of Solutions of Fractional Differential Equations Using New Iterative Method 2016
4. R. Abimannan Stability of Stochastic Fractional Differential Equations 2017
5. E. Rajeswari Existence Of Solutions of Neutral Fractional Impulsive Evolution Equations in Banach Space 2017
6. P. Sandhya Mery Numerical Solution of Stochastic Differential Equations 2017
7. R. Saranya Finite Element Method For Fractional Partial Differential Equations 2017
8. R. Mohanapriya Studies On Stability of Nonlinear Hilfer Fractional Differential Equations 2018
9. S. Sathya Studies On The Stability of Integrodifferential Equations With Nonlocal Initial Conditions 2018
10. C.S. Sridevi Large Deviation Principle for Stochastic Cancer Invasion Model 2018
11. J. Tharika Parveen Exponential Stability Of Neutral Stochastic Differential Equations 2018
12. N. Keerthana, Existence and Asymptotic Behavior of Solutions to the Chemotaxis Models via Traveling Waves 2022
13. V. Umapathi, Controllability of Nonlinear Fractional Integro-differential system with State-Dependent Delay 2023

Ongoing

Sample Data.

Completed

Sl. No.	Name of the candidate	Title of the Dissertation	Year
1.	K. Bhuvana	Three-Dimensional flows in axial turbomachines	2016
2.	T. Haritha	Nonlinear dynamics and chaos	2016
3.	M. Manjula	Boundary value problems in three coordinates	2016
4.	G. Nivetha	Elliptic partial differential equations and its applications	2016
5.	E. Rajeswari	Stochastic differential equations and their applications	2016

6. P. Sandhya Mery Sobolev spaces 2016
7. R. Saranya Delay differential equations and their applications 2016
8. E. Sripriya Linear Operator theory 2016
9. M. Vaira Nanthini Fixed point theory and its applications 2016
10. S. Viji The system of epidermal wound healing model 2016
11. A. Vimala Diffusion equations and their applications 2016
12. M. Heena A biomathematical approach to HIV and AIDS 2017
13. P. Kalaivani Operators on Hilbert space 2017
14. R. Mohanapriya Numerical Methods of Fractional Differential Equation 2017
15. A. Pavunkumar Finite Difference Method for Heat Equation 2017
16. J. Tharika Parveen Analysis of Fractional Integrals and Derivatives 2017
17. G. Bharani Priya Fractals and its Dimensions 2018
18. S. Gayathri Signals and Its Self-Similarity 2018
19. S. Mathivanan Cosmology and Relativity 2018
20. U. Muthupandi Fuzzy Sets 2018
21. S. Ramya Basics of Fractals 2018
22. K. Sabeetha Finite Elements 2018
23. R. Arularasi Stiffness Matrix in Finite Element Method 2018
24. M. Kizha Selveswari Connectivity in Graph Theory 2018
25. M. Priya Fractal Image Compression 2018
26. K. Sangavi Solution of the Heat Equation 2018
27. P. Sangeetha Applications of Graph Theory 2018
28. S. Sathish Mathematical Models of the Vibrating Medium 2018
29. S. Subhash A Study on Cryptography in Symmetric Cipher Models 2018

Tab 5 Content

## Research Publication

- [International](#)
- [National](#)
- [Patents](#)
- [Conferences](#)

- [Books / Chapters](#)
- [Database](#)

## National Publications - Reverse Chronological Order

### Patent Info

### Conference Info

## Books & Chapters Related Info

Name of the Faculty Member: Dr. N. Annapoorani

Name of the Department: Mathematics

### I. Journal Articles (Year Wise):

1. Existence and stability results for stochastic fractional differential equations with Lévy noise P. Umamaheswari, K. Balachandran and N. Annapoorani

Filomat, 34, 2020

URL: <http://journal.pmf.ni.ac.rs/filomat/index.php/filomat/article/view/9997> 2. Existence Results for Fractional Diffusion Equation with Dirichlet Boundary Condition R. Saranya, A. Akilandeewari and N. Annapoorani

Indian Journal of Industrial and Applied Mathematics, 11, 1-11, 2020

DOI: [10.5958/1945-919X.2020.00001.8](https://doi.org/10.5958/1945-919X.2020.00001.8)

3. Existence results of fractional neutral integrodifferential equations with deviating arguments B. Kamalapriya, K. Balachandran and N. Annapoorani

Discontinuity, Nonlinearity, and Complexity, 9, 277-287, 2020

DOI: [10.5890/DNC.2020.06.008](https://doi.org/10.5890/DNC.2020.06.008)

4. Relative controllability of nonlinear fractional Langevin systems with delays in control P. Suresh Kumar, K. Balachandran and N. Annapoorani

Vietnam Journal of Mathematics, 48, 67–81, 2020

URL: <https://link.springer.com/article/10.1007/s10013-019-00356-4>

5. Linearized asymptotic stability of Caputo-Katugampola fractional integrodifferential equations C. Kausika, K. Balachandran and N. Annapoorani



6. Controllability of nonlinear fractional Langevin systems

P. Suresh Kumar, V. Govindaraj, K. Balachandran and N. Annapoorani

Discontinuity, Nonlinearity, and Complexity, 8, 89-99, 2019

DOI: [10.5890/DNC.2019.03.008](https://doi.org/10.5890/DNC.2019.03.008)

7. Controllability of nonlinear fractional Langevin delay systems

P. Suresh Kumar, K. Balachandran and N. Annapoorani

Nonlinear Analysis: Modelling and Control, 23, 321-340, 2018

URL: <https://www.journals.vu.lt/nonlinear-analysis/article/view/13189/12057>

8. Large deviations for stochastic integrodifferential equations of the Ito type with multiple randomness

A. Haseena, M. Suvinthra and N. Annapoorani

Filomat, 32, 473-487, 2018

URL: <http://journal.pmf.ni.ac.rs/filomat/index.php/filomat/article/view/5717>

9. Existence of solutions of stochastic fractional integrodifferential equations

P. Umamaheswari, K. Balachandran and N. Annapoorani

Discontinuity, Nonlinearity, and Complexity, 7, 55-65, 2018

DOI: [10.5890/DNC.2018.03.005](https://doi.org/10.5890/DNC.2018.03.005)

10. Existence of solutions of fractional partial integrodifferential equations with Neumann boundary condition

A. Akilandeewari, K. Balachandran and N. Annapoorani

Nonlinear Functional Analysis and Applications, 22, 711-722, 2017

URL: <http://nfaa.kyungnam.ac.kr/journal-nfaa/index.php/NFAA/article/view/1008/901>

11. Solvability of hyperbolic fractional partial differential equations

A. Akilandeewari, K. Balachandran and N. Annapoorani

Journal of Applied Analysis and Computation, 7, 1570-1585, 2017

DOI: [10.11948/2017095](https://doi.org/10.11948/2017095)

12. On the solution of stochastic fractional integrodifferential equations

P. Umamaheswari, K. Balachandran and N. Annapoorani

Nonlinear Functional Analysis and Applications, 22, 335-354, 2017

URL: <http://nfaa.kyungnam.ac.kr/journal-nfaa/index.php/NFAA/article/view/967/879> 13.  
On large deviations of stochastic integrodifferential equations with Brownian motion A.  
Haseena, M. Suvinthra and N. Annapoorani

Discontinuity, Nonlinearity, and Complexity, 6, 281-294, 2017

DOI: [10.5890/DNC.2017.09.003](https://doi.org/10.5890/DNC.2017.09.003)

14. Existence results for fractional integrodifferential equations

B. Kamalapriya, K. Balachandran and N. Annapoorani

Nonlinear Functional Analysis and Applications, 22, 641-653, 2017

URL: <http://nfaa.kyungnam.ac.kr/journal-nfaa/index.php/NFAA/article/view/991/897> 15.  
Existence results for abstract impulsive damped second order neutral functional differential equations

N. Annapoorani, K. Balachandran and J.K. Kim

Nonlinear Functional Analysis and Applications, 21, 367-397, 2016

URL: <http://nfaa.kyungnam.ac.kr/journal-nfaa/index.php/NFAA/article/view/897/827> 16.  
Existence of mild solutions of neutral evolution integrodifferential equations N. Annapoorani,  
K. Balachandran and J.K. Kim

Nonlinear Functional Analysis and Applications, 16, 141-153, 2011

URL: <http://nfaa.kyungnam.ac.kr/journal-nfaa/index.php/NFAA/article/view/60/53> 17.  
Existence of solutions of abstract partial neutral integrodifferential equations N. Annapoorani  
and K. Balachandran

Carpathian Journal of Mathematics, 26, 134 – 145, 2010

URL: <https://www.carpathian.cunbm.utcluj.ro/article/existence-of-solutions-of-abstract-partial-neutral-integrodifferential-equations/>

18. Existence results for a damped second order abstract functional differential equation with impulses

E. Hernandez, K. Balachandran and N. Annapoorani

Mathematical and Computer Modelling, 50, 1583-1594, 2009

URL: <https://doi.org/10.1016/j.mcm.2009.09.007>

19. Existence results for impulsive neutral evolution integrodifferential equations with infinite delay K.  
Balachandran and N. Annapoorani

Nonlinear Analysis: Hybrid Systems, 3, 674-684, 2009

URL: <https://doi.org/10.1016/j.nahs.2009.06.004>

20. Existence results for impulsive neutral functional integrodifferential equations with infinite delay

Name of the Faculty Member: Dr. N. Annapoorani

Name of the Department: Mathematics

I. Journal Articles (Year Wise):

1. Existence and stability results for stochastic fractional differential equations with Lévy noise P. Umamaheswari, K. Balachandran and N. Annapoorani  
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URL: <http://journal.pmf.ni.ac.rs/filomat/index.php/filomat/article/view/9997>

2. Existence Results for Fractional Diffusion Equation with Dirichlet Boundary Condition R. Saranya, A. Akilandeewari and N. Annapoorani  
Indian Journal of Industrial and Applied Mathematics, 11, 1-11, 2020  
DOI: 10.5958/1945-919X.2020.00001.8

3. Existence results of fractional neutral integrodifferential equations with deviating arguments B. Kamalapriya, K. Balachandran and N. Annapoorani  
Discontinuity, Nonlinearity, and Complexity, 9, 277-287, 2020  
DOI: 10.5890/DNC.2020.06.008

4. Relative controllability of nonlinear fractional Langevin systems with delays in control P. Suresh Kumar, K. Balachandran and N. Annapoorani  
Vietnam Journal of Mathematics, 48, 67-81, 2020  
URL: <https://link.springer.com/article/10.1007/s10013-019-00356-4>

5. Linearized asymptotic stability of Caputo-Katugampola fractional integrodifferential equations C. Kausika, K. Balachandran and N. Annapoorani  
Indian Journal of Industrial and Applied Mathematics, 10, 217-230, 2019  
DOI: 10.5958/1945-919X.2019.00036.7

6. Controllability of nonlinear fractional Langevin systems  
P. Suresh Kumar, V. Govindaraj, K. Balachandran and N. Annapoorani  
Discontinuity, Nonlinearity, and Complexity, 8, 89-99, 2019  
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7. Controllability of nonlinear fractional Langevin delay systems

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8. Large deviations for stochastic integrodifferential equations of the Ito type with multiple randomness

A. Haseena, M. Suvinthra and N. Annapoorani

Filomat, 32, 473-487, 2018

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9. Existence of solutions of stochastic fractional integrodifferential equations P.

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DOI: 10.5890/DNC.2018.03.005

10. Existence of solutions of fractional partial integrodifferential equations with Neumann boundary condition

A. Akilandeewari, K. Balachandran and N. Annapoorani

Nonlinear Functional Analysis and Applications, 22, 711-722, 2017

URL: <http://nfaa.kyungnam.ac.kr/journal-nfaa/index.php/NFAA/article/view/1008/901>

11. Solvability of hyperbolic fractional partial differential equations

A. Akilandeewari, K. Balachandran and N. Annapoorani

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DOI: 10.11948/2017095

12. On the solution of stochastic fractional integrodifferential equations

P. Umamaheswari, K. Balachandran and N. Annapoorani

Nonlinear Functional Analysis and Applications, 22, 335-354, 2017

URL: <http://nfaa.kyungnam.ac.kr/journal-nfaa/index.php/NFAA/article/view/967/879>

13. On large deviations of stochastic integrodifferential equations with Brownian motion A. Haseena, M. Suvinthra and N. Annapoorani

Discontinuity, Nonlinearity, and Complexity, 6, 281-294, 2017

14. Existence results for fractional integrodifferential equations

B. Kamalapriya, K. Balachandran and N. Annapoorani

Nonlinear Functional Analysis and Applications, 22, 641-653, 2017

URL: <http://nfaa.kyungnam.ac.kr/journal-nfaa/index.php/NFAA/article/view/991/897>

15. Existence results for abstract impulsive damped second order neutral functional differential equations

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Nonlinear Functional Analysis and Applications, 21, 367-397, 2016

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16. Existence of mild solutions of neutral evolution integrodifferential equations

N. Annapoorani, K. Balachandran and J.K. Kim

Nonlinear Functional Analysis and Applications, 16, 141-153, 2011

URL: <http://nfaa.kyungnam.ac.kr/journal-nfaa/index.php/NFAA/article/view/60/53>

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URL: <https://www.carpathian.cunbm.utcluj.ro/article/existence-of-solutions-of-abstract-partial-neutral-integrodifferential-equations/>

18. Existence results for a damped second order abstract functional differential equation with impulses

E. Hernandez, K. Balachandran and N. Annapoorani

Mathematical and Computer Modelling, 50, 1583-1594, 2009

URL: <https://doi.org/10.1016/j.mcm.2009.09.007>

19. Existence results for impulsive neutral evolution integrodifferential equations with infinite delay K. Balachandran and N. Annapoorani

Nonlinear Analysis: Hybrid Systems, 3, 674-684, 2009

URL: <https://doi.org/10.1016/j.nahs.2009.06.004>

20. Existence results for impulsive neutral functional integrodifferential equations with infinite delay

J.Y. Park, K. Balachandran and N. Annapoorani

Nonlinear Analysis-Theory Methods and Applications, 71, 3152-3162, 2009

URL: <https://doi.org/10.1016/j.na.2009.01.192>

28. [Hadamard functional fractional integrals and derivatives and fractional differential equations](#)

K. Balachandran, M.

Matar, N. Annapoorani and D. Prabu

FILOMAT, 38(3), 2024, 779-792

27. [Dynamics and diffusion limit of traveling waves in a two-species chemotactic model with logarithmic sensitivity](#)

N. Keerthana, R. Saranya & N.

Annapoorani

Mathematics and Computers in Simulation, 2023

26. [Linearized asymptotic stability of implicit fractional integrodifferential system](#)

C. Kausika, P. Suresh Kumar and

N. Annapoorani

International Journal of Dynamics and Control, 2023

25. [Controllability of nonlinear fractional Langevin systems using  \$\Psi\$ -Caputo fractional derivative](#)

D. Prabu, P. Suresh Kumar

and N. Annapoorani

International Journal of Dynamics and Control, 2023

24. [Bounds for the blow-up time of solution to a nonlinear viscoelastic equation with fractional damping](#)

R. Saranya, A. Akilandeewari

and N. Annapoorani

23. [Existence and Stability Results for Stochastic Fractional Neutral Differential Equations with Gaussian Noise and Levy Noise](#)

P. Umamaheswari, K.

Balachandran, N. Annapoorani & D. Kim

Nonlinear Functional Analysis and Applications, 28(2), 2023

365-382

22. [Existence results for fractional integrodifferential equations of Sobolev type with deviating arguments](#)

B. Kamalapriya, K.

Balachandran and N. Annapoorani

Journal of Applied Nonlinear Dynamics, 11(1), 2022, 57-67

21. [Existence and stability results of generalized fractional integrodifferential equations](#)

Nonlinear Functional

Analysis and Applications, 26(4), 2021, 793-809.

20. [Existence and stability results for stochastic fractional differential equations with Lévy noise](#)

P. Umamaheswari, K. Balachandran and N. Annapoorani

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19. [Existence results for fractional diffusion equation with Dirichlet boundary condition](#)

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18. [Existence results of fractional neutral integrodifferential equations with deviating arguments](#)

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17. [Relative controllability of nonlinear fractional Langevin systems with delays in control](#)

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Nonlinear Analysis: Modelling and Control, 23, 321-340, 2018
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Nonlinear Functional Analysis and Applications, 22, 711-722, 2017
10. [Solvability of hyperbolic fractional partial differential equations](#)  
A. Akilandeewari, K. Balachandran and N. Annapoorani  
Journal of Applied Analysis and Computation, 7, 1570-1585, 2017
9. [On the solution of stochastic fractional integrodifferential equations](#)  
P. Umamaheswari, K. Balachandran and N. Annapoorani  
Nonlinear Functional Analysis and Applications, 22, 335-354, 2017
8. [On large deviations of stochastic integrodifferential equations with Brownian motion](#)  
A. Haseena, M. Suvinthra and N. Annapoorani  
Discontinuity, Nonlinearity, and Complexity, 6, 281-294, 2017



7. [Existence results for fractional integrodifferential equations](#)  
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 Nonlinear Functional Analysis and Applications, 22, 641-653, 2017
6. [Existence results for abstract impulsive damped second order neutral functional differential equations](#)  
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5. [Existence of mild solutions of neutral evolution integrodifferential equations](#)  
 N. Annapoorani, K. Balachandran and J.K. Kim  
 Nonlinear Functional Analysis and Applications, 16, 141-153, 2011
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 Carpathian Journal of Mathematics, 26, 134 – 145, 2010
3. [Existence results for a damped second order abstract functional differential equation with impulses.](#)  
 E. Hernandez, K. Balachandran and N. Annapoorani  
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2. [Existence results for impulsive neutral evolution integrodifferential equations with infinite delay](#)  
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1. [Existence results for impulsive neutral functional integrodifferential equations with infinite delay](#)  
 J.Y. Park, K. Balachandran and N. Annapoorani  
 Nonlinear Analysis-Theory Methods and Applications, 71, 3152-3162, 2009

Alumini Reflections: