

## BIO-DATA

- A. Name:** Dr. S. Jackson Durairaj; **Designation:** Associate Professor (Research)
- B. Date of Birth:** 31-10-1985 (Age: 38)
- C. Institution:** Sathyabama Institute of Science and Technology (Deemed University)
- D. Whether belongs to SC/ST:** No
- E. Academic career:**

S. No.	Degree/Qualification	Year	Subject	University/Organization	% of marks
1.	B.Sc	2003-2006	Biotechnology	Pondicherry University	62%
2.	M.Sc	2006-2008	Biotechnology	Manonmaniam Sundaranar University	74.21%
3.	PGDME	2008-2009	Medical Entomology	VCRC/ Pondicherry University	82.2%
4.	Ph.D	2009-2014	Biotechnology	Manonmaniam Sundaranar University	Highly commended
5.	CSIR NET	2019	Life Science	CSIR-UGC	Passed - (63rd rank)
6.	ARS NET	2014	Biotechnology	ICAR	Passed
7.	GATE	2014	Biotechnology	IIT	Passed
8.	TN-SLET	2016	Life Science	UGC	Passed
9.	GATE	2018	Life Science	IIT	passed

**Ph.D Title:** Comparative studies on regeneration biology and identification of diagnostic target for prostate cancer - (Highly commended) from Department of Biotechnology, Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu. (Guide: Prof. Dr. S. Sudhakar).

**F. Professional career:**

- *From May 2022 – Currently* working as an **Associate Professor (Research)** at Molecular Biology and Stem Cell Research lab, Centre for Molecular and Nanomedical Sciences, Sathyabama Institute of Science and Technology, Chennai.
- *From Oct 2016 – April 2022* worked as a **‘Scientist ‘C’** at Regeneration and Stem cell Biology lab, Centre for Molecular and Nanomedical Sciences, Sathyabama Institute of Science and Technology, Chennai.
- *From Jan 2016 to Sep 2016* Worked as **‘Assistant Professor’** in the Dept. of Biotechnology, NMS SVN College, Madurai, Tamilnadu.

- 2015 - 2016 Worked as ‘**Assistant Professor**’ in the Dept. of Biotechnology, Sivagamiammal College of Arts and Science, Krishnagiri, Tamilnadu.
- 2013 - 2014 Maulana Azad National Senior Research Fellow (**MANF-SRF**) in a project entitled on “Comparative studies on regeneration biology and identification of diagnostic target for prostate cancer” University Grants Commission, New Delhi, India.
- 2011 - 2013 Maulana Azad National Junior Research Fellow (**MANF-JRF**) in a project entitled on “Identification and characterization of regeneration specific genes” University Grants Commission, New Delhi, India.

**G. Award/prize/ certificate etc., won by the investigator:**

1. Awarded ‘**Early Career Research Award**’ (2016)’ during the year 2016 by DST-SERB along with project funding for three years.
2. Awarded ‘**Maulana Azad National Fellowship**’ from UGC, New Delhi, India in the year 2011 for four years.
3. Awarded “**Research Excellence Award**” from Institute of Scholars (InSc) during March, 2023.

**H. Publication (Numbers only):** International – 25; Total – 25.

**Publications**

1. S Johnson Retnaraj Samuel et al., Autofluorescence in BrdU-positive cells and augmentation of regeneration kinetics by riboflavin. *Stem Cells and Development*, 2012, 21(11): 2071-83. (IF 4.7)
2. R M Kalidas et al., Conserved lamin A protein expression in differentiated cells in the earthworm *Eudrilus eugeniae*. **Cell Biology International**, 2015, 39 (9): 1036-43. (IF 1.7)
3. G D Nino et al., Studies on regeneration of central nervous system and social ability of the earthworm *Eudrilus eugeniae*. *Invertebrate Neuroscience*, 2016, 16:6. (IF 1.2)
4. S Elaiya Raja et al., Studies on organogenesis during regeneration in the earthworm, *Eudrilus eugeniae*, in support of symbiotic association with *Bacillus endophyticus*. **Turkish Journal of Biology**, 2016, 41: 113-26. (IF 1.1)
5. S Elaiya Raja et al., Function of translationally controlled tumor protein (TCTP) in *Eudrilus eugeniae* regeneration. **PLOS ONE**, 2017, 12(4): e0175319. (IF 3.2)
6. CV Niranjan, et al., Heat-inactivated coelomic fluid of the earthworm *Perionyx excavatus* is a possible alternative source for fetal bovine serum in animal cell culture. **Biotechnology Progress**, 2019, e2817. (IF 2.4)
7. S. Jackson Durairaj et al., Understanding the Role of the Clitellum in the Regeneration Events of the Earthworm *Eudrilus eugeniae*. **Cells Tissues Organs**, 2019, 208:134–141. (IF 2.06)
8. Y Beryl Vedha et al., Developmental Stages of Zebrafish (*Danio rerio*) Embryos and Toxicological Studies using Foldscope Microscope. **Cell Biology International**, 2020;1–13. (IF 2.5)
9. CV Niranjan, et al., Novel and Efficient protocol for DNA coating-based identification of DNA-Protein interaction by antibody mediated immunodetection. **Reports of Biochemistry and Molecular Biology**, 2020. (SJR 0.37)
10. SC Karthikeyan et al., Exploring the effect of UV-C radiation on earthworm and understanding its genomic integrity in the context of H2AX expression. *Scientific Report*, 2020. (IF 4)
11. Chelladurai KS, Christyraj JDS et al. Alternative to FBS in animal cell culture-an overview and future perspective. **Heliyon** e07686, 2021. (IF 3.77)
12. V Reethu, R Kamarajan, J Madesh, G Harsha, J Vaishnavi, S Jackson Durairaj, K Kalishwaralal,

S Johnson Retnaraj Samuel and Manikandan Mohan. "Designing of cytotoxic T lymphocyte-based multi-epitope vaccine against SARS-CoV2: a reverse vaccinology approach." **Journal of Biomolecular Structure and Dynamics** (2021): 1-16. (IF 5.2)

13. G Mijithra, J Johnson Retnaraj Samuel, M Nandhini, V Saravanakumar, Y Beryl Vedha, M Manikandan, and S Jackson Durairaj. "Isolation and Molecular Characterization of a Fluorescence-Emitting Bacterium from the Gut of Earthworm, *Perionyx excavatus* (Perrier, 1872), and Its Symbiotic Association in Earthworm Regeneration." **Journal of Skin and Stem Cell** 8, no. 4 (2021).

14. Sayan P, Subburathinam B et al., Importance of clitellar tissue in the regeneration ability of earthworm *Eudrilus eugeniae*. **Funct Integr Genomics** (2022). <https://doi.org/10.1007/s10142-022-00849-5> (IF 3.7)

15. Jebaranjitham JN, Christyraj JD, Prasannan A, Rajagopalan K, Chelladurai KS, Gnanaraja JK. Current scenario of solid waste management techniques and challenges in Covid-19-A review. **Heliyon** (2022) Jul 2:e09855. (IF 3.77)

16. G Mijithra, S Johnson Retnaraj Samuel, V Saravanakumar, Y Beryl Vedha, SC Karthikeyan, M Manikandan, K Kalishwaralal, B Yogesh, S Jackson Durairaj. Foldscope microscope, an inexpensive alternative tool to conventional microscopy—Applications in research and education: A review. **Microscopy Research & Technique** (2022). <https://doi.org/10.1002/jemt.24205>. (IF 2.89)

17. R Kamarajan, S Jackson Durairaj, et al. Comparative analysis of the survival and regeneration potential of juvenile and matured earthworm, *Eudrilus eugeniae* upon in-vivo and in-vitro maintenance. **In Vitro Cellular & Developmental Biology – Animal** (2022). doi: 10.1007/s11626-022-00706-6. (IF 2.7)

18. G Mijithra, S Jackson Durairaj, et al. "Understanding the process of angiogenesis in regenerating earthworm." **In Vitro Cellular & Developmental Biology-Animal** (2023): 1-12.

19. Ganesan, Mijithra, Johnson Retnaraj Samuel Selvan Christyraj, Beryl Vedha Yesudhasan, Manikandan Mohan, and Jackson Durairaj Selvan Christyraj. "Live foldscope imaging of two environmentally beneficial earthworm species and their early developmental stages." **Environmental Quality Management** (2023).

20. Rajagopalan, Kamarajan, Jackson Durairaj Selvan Christyraj, Karthikeyan Subbiahanadar Chelladurai, Puja Das, Karthikeyan Mahendran, Logeshwari Nagarajan, and Saritha Gunalan. "Understanding the Multi-Functional Role of TCTP in the Regeneration Process of Earthworm, *Perionyx excavatus*." **Tissue Engineering and Regenerative Medicine** (2023): 1-14. (IF 4.5).

21. Rossan Mathews, Melinda Grace, Ravichandran Subramaniam, Saravanakumar Venkatachalam, Johnson Retnaraj Samuel Selvan Christyraj, Beryl Vedha Yesudhasan, Kalishwaralal Kalimuthu, Manikandan Mohan, and Jackson Durairaj Selvan Christyraj. "Biochemical and functional characterization of heat-inactivated coelomic fluid from earthworms as a potential alternative for fetal bovine serum in animal cell culture." **Scientific Reports** 14, no. 1 (2024): 5606. (IF 4.6).

22. Kamarajan Rajagopalana, Jackson Durairaj Selvan Christyraj, Karthikeyan Subbiahanadar Chelladurai, Johnson Retnaraj Samuel Selvan Christyraj\*, Puja Das, Apoorva Roy, Chaughule Vrushali, Nehla Siraj M Chemmetb. The molecular mechanisms underlying the regeneration process in the earthworm, *Perionyx excavatus* exhibit indications of apoptosis-induced compensatory proliferation (AICP). **In Vitro Cellular & Developmental Biology-Animal** (2024): 1-14. Impact Factor 2.7).

23. Kamarajan Rajagopalana, Jackson Durairaj Selvan Christyraj, Karthikeyan Subbiahanadar Chelladurai, et al. Understanding the molecular mechanism of regeneration through Apoptosis-Induced Compensatory Proliferation studies - Updates and Future aspects. **Apoptosis** (2024): 1-16. Impact Factor 7.2).

24. Subramaniam, Ravichandran, Johnson Retnaraj Samuel Selvan Christyraj, Jackson Durairaj Selvan Christyraj, Saravanakumar Venkatachalam, Melinda Grace Rossan Mathews, Kesavamoorthy Venkatachalam, Kalishwaralal Kalimuthu, and Beryl Vedha Yesudhasan. "Profiling microRNAs of earthworm, *Perionyx excavatus* and deciphering the expression of distinct novel miRNAs regulating epimorphosis regeneration." *Gene* (2024): 148636.
25. Kandaswamy, Karthikeyan, Kayalvizhi Vadivelu, Jackson Durairaj Selvan Christyraj, Karthikeyan Subbiahanadar Chelladurai, Kamarajan Rajagopalan, Puja Das, Meikandan Chandrasekar, Nivedha Balamurugan, Vijayalakshmi Subramanian, and Johnson Retnaraj Samuel Selvan Christyraj. "An improved protocol for inducing the gut cleaning process in earthworm for various experiments." *Animal Biology* 1, no. aop (2024): 1-15.

#### Patents:

1. Dr. S. Jackson Durairaj is one of the inventors in the Indian patent, entitled on "Identification, characterization and structural elucidation of new anti-tuberculosis drug"
2. Dr. S. Jackson Durairaj is one of the inventors in the Indian patent, entitled on, "Alternative supplement for serum in animal cell culture medium", Application number 201941009691 – 13/03/2019.
3. Dr. S. Jackson Durairaj is one of the inventors in the Indian patent, entitled on, "Earthworm Coelomic fluid as a potential blocking agent in western blotting experiments.", Application number 202041055479 – 21/12/2020.
4. Dr. S. Jackson Durairaj is a key inventor in the Indian patent, entitled on, "A deep root watering system.", Application number 202241036037 – 23/06/2022.

**Books    Research    Paper,    report    General    articles:**    Book    chapters    –    08  
(<https://scholar.google.com/citations?user=pIvrdXMAAAAJ&hl=en>)

#### I. List of completed and ongoing projects

S. NO.	Projects/ Funding Agency	Budget	Duration	Start date	Status
1.	DBT- Foldscope Project - "Understanding the role of Triphala in tissue regeneration and stem cell proliferation" (as a PI)  <b>File No:</b> BT/IN/Indo-US/Foldscope/39/2015	Rs 8 lakhs	1.5 Year	26-06-2018	Completed
2.	DST-SERB ECR Project - "Silencing of TCTP gene expression to study the regeneration in earthworm <i>Perionyx excavatus</i> " (as a PI)  <b>File No:</b> ECR/2016/000956	Rs 37.45 lakhs	3 Years	30-04-2019	Completed
3.	Department of Health Research (DHR) Project - "In-vitro functional organ model development for prostate cancer and its molecular characterization" (as a Mentor)	Rs 29.85 lakhs	3 Years	05-08-2020	Ongoing

	<b>File No:</b> R.12014/78/2020-HR				
<b>4.</b>	ICMR Project - Characterization of targeted small molecules for drug development, isolated from regenerating earthworms having potential wound healing and antibacterial properties ( <b>As a Co-PI</b> ) <b>File No:</b> 61/7/2020-DDi/BMS	Rs 27.27 lakhs	2 Years	27-01-2021	Completed
<b>5.</b>	DBT PACE Project - Production, characterization and scaling-up of earthworm coelomic fluid-based serum-free cell culture medium for animal cell culture. <b>(As a Co-PI)</b> <b>File No:</b> BT/AIR0846/PACE-18/19	Rs 27 lakhs	2 Years	23-09-2020	Completed
<b>6.</b>	<b>SERB-OVDF</b> - Analysis of atrazine induced pathological variation associated with Alzheimers disease using a zebrafish genetic model. ( <b>as a Mentor</b> ) <b>File No:</b> SB/S9/Z-03/2017-XIV (2020-21)	Rs 31.67 lakhs	1.5 Year	11-01-2022	Completed
<b>7.</b>	<b>TNSCST</b> - Earthworm a unique model to monitor the electromagnetic hazards associated with the exposure of high voltage overhead electric lines. <b>File No:</b> TNSCST/SPS/2021-2022/	Rs 7500	3 months	11-03-2022	Completed
<b>8.</b>	<b>DST SHRI</b> - Preserving the tribal practice and exploring the molecular level evidence behind the use of spider web for wound healing and abscess <b>(as a PI)</b> <b>File No:</b> DST/TDT/SHRI/24/2021	Rs 20.80 lakhs	2 Years	28-03-2022	Ongoing
<b>9.</b>	<b>DST</b> - Sustainable livelihood development through technology assisted indigenous backyard poultry farming and conversion of value-added products. ( <b>As a Co-PI</b> ) <b>File No:</b> DST/SEED/SCSP/STI/2021/882 (C)	Rs 67.72 lakhs	1.5 years	04-01-2023	Ongoing

<b>10.</b>	<b>Sathyabama Seed Money</b> – Standardization and development of lab grown meat (Goat) and corresponding cost effective medium. <b>(As a Co-PI)</b>  File No: SIST/2023-2024/SG/002	Rs 5.47 lakhs	1 year	05-10-2023	Ongoing
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*S. Jackson Durairaj*

**Name:** Dr. S. Jackson Durairaj

Date: 31-08-2024

Place: Chennai