

## CURRICULUM VITAE

### DR. SOUGATA KARMAKAR

Assistant Professor,  
Dept. of Design,  
Indian Institute of Technology (IIT) Guwahati,  
Guwahati-781039, Assam, India.  
Email: karmakar.sougata@gmail.com, karmakar.sougata@iitg.ernet.in  
Mobile/Cell: +91-8011403513, Ph: 0361-2582464  
URL: <http://www.iitg.ac.in/design/ergonomic%20lab/faculties.html>



**Educational Status:** Ph.D in Physiology (Ergonomics), Bharathiar University, India.  
M.Sc. in Physiology (Rank-1), University of Burdwan, India.  
PGDM in Human Resource Management, Pondicherry University, India.

### Work Experience:

1. Presently have been working as Assistant Professor in Dept. of Design, IIT Guwahati, Assam, India since March 2010.
2. Worked as Assistant Professor in K.G. College of Health Sciences, Coimbatore, T.N., India in Feb. 2010.
3. Worked as a Research Fellow from 29.11.04 to 28.11.09 in Defence Institute of Physiology & Allied Sciences (DIPAS), DRDO, Delhi-54, India.
4. Worked as Lecturer (01.07.04 to 25.11.04) in Dept. of Physiology in Krishnagar Govt. College, Krishnagar, Nadia (W.B.), India.

### Editorial Board Member-Journal:

- International Journal of Occupational Safety and Health (IJOSH)-official journal of the Occupational Health and Safety Society of Nepal (OHSSN)
- Medical Science [ISSN: 2321-5291] published by Pubmed House, USA.

### Reviewer:

- Journal of the Institution of Engineers (India): Series C.[Spinger]
- HOMO-Journal of Comparative Human Biology [Elsevier]
- Current science [Spinger]
- International Journal of Industrial Ergonomics [Elsevier]
- Textile Research Journal [Sage Publication]
- Malaysian Journal of Nutrition [Pusat Sitasi Malaysia (Malaysian Citation Centre)]

### SEMINARS/WORKSHOPS/CONFERENCES /SHORT-TERM COURSES ORGANISED

Role	Name of Sem./Wor./Con.	Funded By	Date	International/ National
Co-Organizer	Quality Improvement Programme (QIP) 'Ergonomics & Technology Applications'	MHRD	25-29 <sup>th</sup> October 2010	National
Conference Secretary	Typography Day 2013	Various Sponsors	7-9 <sup>th</sup> March 2013	International
Conference Secretary	International Ergonomics Conference HWWE 2104	Various Sponsors	1 <sup>st</sup> -5 <sup>th</sup> December 2014	International
Principal Consultant and Course Coordinator	Short term training program on Automotive Ergonomics and Design	TATA Elxsi Ltd.	16 <sup>th</sup> -20 <sup>th</sup> March 2015	National

### **Invited Talk/ Workshop conducted:**

1. Invited as keynote speaker in international conference “MED BY”- Mechanical Engineering & Design, organized by **SEC, Beer-Sheva, Israel** during 5<sup>th</sup> to 9<sup>th</sup> July 2015.
2. Conducted week long (January, 2015) workshop on “Fundamentals of Ergonomics” and “Automotive Ergonomics” at **DYPDC Center for Automotive Research and Studies**, Charoli Bk. via Lohegaon, Pune - 412 105, Maharashtra, India.
3. Delivered a lecture entitled ‘Visual information processing to understand consumer behavior in Retail Business’ in a AICTE sponsored seminar ‘*Atmospheric and Space Management in Retail Business*’ during 22<sup>nd</sup> December 2014, organized by **Assam College of Management**, Guwahati, Assam, India.
4. As resource person, Dr. Sougata Karmakar, Assistant Professor, Department of Design, Indian Institute of Technology – Guwahati conducted a two-day research workshop on ‘Ergonomics: Application in Engineering and Industrial Design’ sponsored by TEQIP-II (Technical Education Quality Improvement Programme Phase-II) at the **PSG College of Technology**, Coimbatore, on August 24 to 25, 2013.
5. Delivered two lectures entitled ‘Virtual Ergonomics in Product and Workplace Design’ and ‘Environmental Factors in Workplace’ in a Faculty Development Programme (FDP) on ‘Ergonomics and Safety in Product Design’ during 14-18 May 2013, organized by Agricultural Engineering Dept., **NERIST**, Nirjuli, Arunachal Pradesh, India.
6. Invited as resource person and delivered lectures entitled ‘Ergonomics in Built Environment’ to AICTE approved faculties from various institutes during MHRD sponsored workshop ‘National Programme on Technology Enhanced Learning’ organized jointly by **IIT Guwahati and Royal Group of Institutions, Guwahati** on 29<sup>th</sup> April 2013.
7. Conducted one-day (25<sup>th</sup> March, 2013) workshop on “Fundamentals of Human Factors / Ergonomics” for the PG students at Dept. of Physiology, **Presidency University**, Kolkata-700001, West Bengal, India.
8. Conducted one-day (3<sup>rd</sup> August, 2012) workshop on “Human Factors / Ergonomics for Interior Design” for the students at **The Bhawanipur Design Academy**, Kolkata- 700020, West Bengal, India.
9. Invited as resource person for presentation in National Design Sensitisation Seminar (NDSS), organized by National Institute of Design (NID), Ahmedabad, on behest of the Ministry of Commerce and Industry, Govt. of India, on 2 August, 2012 at **NIT Durgapur**, West Bengal, India.
10. Invited as resource person and delivered lectures in TEQIP sponsored Faculty Development Programme (FDP) Workshop on ‘Advances in Computer Integrated Manufacturing and Robotics’ (26-30 June 2012) organized by Mechanical Engineering Dept., **NERIST**, Nirjuli, Arunachal Pradesh, India.
11. Invited as resource person and delivered lectures in TEQIP sponsored Staff Development Programme (SDP) Workshop on ‘Ergonomics in Workplace’ (22-26 June 2012) organized by Mechanical Engineering Dept., **NERIST**, Nirjuli, Arunachal Pradesh, India.
12. Conducted half-day (16<sup>th</sup> April, 2011) workshop for M.Des students at Instrument Design Development Center, **Indian Institute of Technology (IIT) Delhi**, Hauz Khas, New Delhi, India.

13. Conducted week long (04-09 February, 2010) workshop on “Human Factors / Ergonomics for the Automotive Sector” at **DYPDC Center for Automotive Research and Studies**, Charoli Bk. via Lohegaon, Pune - 412 105, Maharashtra, India.

**Awards:**

- ‘Prof. Sachidananda Banerjee Memorial Research Award: 2012’, under **Young Scientist Award** scheme of Physiological Society of India (PSI)
- **National Scholarship:** Awarded for Rank-59 in Madhyamik Examination, 1996.
- **National Scholarship:** Awarded for Rank-3 in B.Sc. Examination, 2001.
- **University Gold Medal:** Awarded for being 1st Class 1<sup>st</sup> in M.Sc. in 2003.
- Certificate of merit was awarded in the 18<sup>th</sup> Annual Training Programme (2004) on Science Communication and Media Practice.

**Membership:**

- Regular Member of Human Factor and Ergonomics Society (HFES),USA [Record ID: 33130]
- Life member of Indian Society of Ergonomics (ISE) [L-148]
- Life member of Indian Science Congress Association (ISCA) [L-11636]
- Life member of Physiological Society of India (PSI)
- Life member of Indian Science News Association (ISNA)
- Life member of Indian Association of Biomedical Scientists (IABMS) [ LM-840/2010]
- Life Member of Biomedical Engineering Society of India (BMESI) [ LM-1031]
- Life member of the Association of Physiologist and Pharmacologist of Indian (APPI) [Membership No. 2701]
- Member of International Association of Engineers (IAENG) [Membership number: 124709]

**PhD students and their research work:**

Name	Roll No.	Status of thesis work	Thesis title/ research area
Dr. Anirban Chowdhury	126105003	Provisionally awarded	Influence of Anthropomorphic Product Appearance on Purchase Intention: A Cognitive Ergonomics Perspective
Mr. Sanjog J.	11610501	Thesis submitted	Ergonomic design interventions for improvement of shop-floor working conditions in the Indian small and medium scale injection-molded plastic furniture manufacturing industries
Ms. Swathi Matta Reddy	10610501	Thesis submitted	Influence of Colour and Form in Product Choice: Cognitive Ergonomics Perspective
Mr. Thaneswer Patel	126105007	Thesis submitted	Ergonomic Design Modification of ‘Pedal Operated Paddy Thresher’ Adoptable for Agricultural Needs of Northeast India
Mr. Surendra Kumar	126105004	Continuing research work	Study on illumination and noise level in handloom sectors and their physiological and psychological impact on weavers
Mr. Indresh Kumar	146105005	SOAS-appearing	Study on influence of various factors (in vehicle devices, age, gender, experience etc.) on distraction behavior of Indian drivers
Ms. Susmita Nath	156105008	Course work-going on	Design intervention towards reduction of impact of vibration during use of vibrating hand-tools in unorganized occupational sector

## **Publications**

### **Journal Papers:**

#### **2015**

1. Sanjog, J., Patnaik, B., Patel, T. and **Karmakar, S.**, 2015. Context specific design interventions in blending workstation: An ergonomics perspective. *Journal of Industrial and Production Engineering*. (DOI: 10.1080/21681015.2015.1099057) [Taylor & Francis]
2. Sanjog, J., Patel, T., Chowdhury, A. and **Karmakar, S.**, 2015. Musculoskeletal ailments in Indian injection-molded plastic furniture manufacturing shop-floor: Mediating role of work shift duration. *International Journal of Industrial Ergonomics*, 48, 89-98. (DOI: 10.1016/j.ergon.2015.04.004) [Elsevier]
3. Sanjog, J., **Karmakar, S.**, Patel, T. and Chowdhury, A., 2015. Towards virtual ergonomics: aviation and aerospace. *Aircraft Engineering and Aerospace Technology: An International Journal*, Vol. 87 (3), 266 – 273. [Emerald]
4. Patel, T., Sanjog, J. and **Karmakar, S.**, 2015. Isometric hand grip strength of agricultural workers from northeast region of India. *Agric. Eng. Int: CIGR Journal*, 17(1), 130-140.

#### **2014**

5. Patel, T., Sanjog, J., Kumar, P., and **Karmakar, S.**, 2014. Isometric muscular strength data of Indian agricultural workers for equipment design: Critical analysis. *Agric. Eng. Int: CIGR Journal*, 16(2), 70-79.
6. Patel, T. and **Karmakar, S.**, 2014. Book review: Introduction to Ergonomics, Third Edition. *International Journal of Industrial Ergonomics*, 44(6), 892-893. [Elsevier]
7. Chowdhury, A., **Karmakar, S.**, Reddy, S.M. and Ghosh, S. and Debkumar Chakrabarti 2014. Usability is more valuable predictor than product personality for product choice in human-product physical interaction. *International Journal of Industrial Ergonomics*, 44(5), 697-705. (doi: 10.1016/j.ergon.2014.07.008)[Elsevier]
8. Patel, T. and **Karmakar, S.**, 2014. Book review: Automotive Ergonomics: Driver-Vehicle Interaction. *Journal of Transport Geography*, 41, 346–347. [Elsevier]
9. **Karmakar, S.**, Sanjog, J. and Patel, T., 2014. Digital Human Modeling and Simulation in Product and Workplace Design: Indian Scenario. *International Journal of Engineering Research and Applications (IJERA)*, Special issue. Pp. 06-12. [ISSN: 2248-9622]
10. **Karmakar, S.**, 2014. Book Review: Ergonomics in the Automotive Design Process. *Ergonomics in Design*, 22 (1), p.33. SAGE Publication. [DOI: 10.1177/1064804614522753]

#### **2013**

11. Chowdhury, A., **Karmakar, S.**, Ghosh, S. and Chakrabarti, D., 2013. Purchase intention of anthropomorphic chair is influenced by visual attractiveness and perceived pleasure. *International Review of Applied Engineering Research*, 4(2), 133-140.
12. Patel, T. and **Karmakar, S.**, 2014. Anthropometric and strength data of Indian agricultural workers for farm equipment design: Book review. *International Journal of Industrial Ergonomics*, 44, 189-190. (DOI: 10.1016/j.ergon.2013.10.006) [Elsevier]
13. Patel, T., Sanjog, J., Chowdhury, A., and **Karmakar, S.**, 2013. Applications of DHM in Agricultural Engineering: A Review. *Advanced Engineering Forum*, 10, 16-21. [DOI:10.4028/www.scientific.net/AEF.10.16]

14. Patel, T., **Karmakar, S.**, Sanjog, J., Kumar, S. and Chowdhury, A., 2013. Socio-Economic and Environmental Changes with Transition from Shifting to Settled Cultivation In North-Eastern India: An Ergonomics Perspective. *International Journal of Agricultural Science and Research*, 3(2), 117-136
15. Sanjog, J., Patel, T. and **Karmakar, S.**, 2013. Indoor physical work environment: an ergonomics perspective. *International Journal of Science, Engineering and Technology Research*, 2(3), 507-513.

## 2012

16. Sanjog, J., **Karmakar, S.**, Patel, T. and Chowdhury, A., 2012. DHM an aid for virtual ergonomics of manufacturing shop floor: A review with reference to industrially developing countries. *International Journal of Computer Applications*, 54(14), 18-23. (DOI: 10.5120/8634-2541)
17. Chowdhury, A., Sanjog, J., Reddy, S.M. and **Karmakar, S.**, 2012. Nanomaterials in the field of Design Ergonomics: Present status. *Ergonomics*, 55(12), 1453-1462. [doi:10.1080/00140139.2012.720287][Taylor and Francis]
18. Sanjog, J., **Karmakar, S.**, Agarwal, H. and Dattu Patil, C., 2012. Designing and ergonomic Evaluation of a Shoe-rack in CAD Environment. *International Journal of Computer Applications*, 49(20), 38-41. (DOI:10.5120/7890-1275)
19. Chowdhury, A., **Karmakar, S.**, Reddy, S.M., Sanjog, J., Ghosh, S. and Chakrabarti, D., 2012. Visual attention analysis on mutated brand name using eye-tracking: A case study. *Journal of World Academy of Science, Engineering and Technology*, Issue-68, p. 1132-1135. (pISSN: 2010-376X, eISSN:2010-3778)
20. **Karmakar, S.**, Pal, M. S., Majumdar, Deepti. and Majumdar, D., 2012. Application of Digital Human Modeling and Simulation for Vision Analysis of Pilots in a Jet Aircraft: A Case Study. *Work*. IOS Press, 41 Suppl. 1, 3412-3418. [DOI: 10.3233/WORK-2012-0617-3412]
21. Reddy, S.M., Chakrabarti, D. and **Karmakar, S.**, 2012. Emotion and Interior Space Design: An Ergonomic Perspective. *Work*. IOS Press, 41 Suppl. 1, 1072-1078. [DOI: 10.3233/WORK-2012-0284-1072]

## **Papers in Conference Proceedings:**

1. Sanjog, J., Dash, T., Patel, T., and **Karmakar, S.**, 2015. Redesign of small and medium scale injection molded plastic furniture manufacturing shop floor: Physical and environmental ergonomics aspects, In: Proceedings of 8th International Conference on Planning and Design (ICPD 2015), National Cheng Kung University, Taiwan, 25th - 28th May, 2015, pp. 276 – 286. [ISBN: 978-986-04-4432-2]
2. Sanjog, J., Patel, T., Chowdhury, A., Kumar, S. and **Karmakar, S.**, 2015. Ergonomics Investigations across Durable Goods Manufacturing Sector in India: an Insight. In: P.C. Dhara (Ed.), Ergonomics for Rural Development: A collection of articles presented at the International Conference on Ergonomics (HWWE 2013), 4<sup>th</sup>-6<sup>th</sup> December 2013, Vidyasagar University, Midnapore, West Bengal, India, pp.167-174. [ISBN: 978-93-5174-905-9]
3. Patel, T., Sanjog, J., Kumar, P. and **Karmakar, S.**, 2015. Analytical study of Isometric Muscular Strength of Agricultural Workers: Indian Perspective. In: P.C. Dhara (Ed.), Ergonomics for Rural Development: A collection of articles presented at the International Conference on Ergonomics (HWWE 2013), 4<sup>th</sup>-6<sup>th</sup> December 2013, Vidyasagar University, Midnapore, West Bengal, India, pp.69-77. [ISBN: 978-93-5174-905-9]

4. Chowdhury, A., Reddy, S.M., Chakrabarti, D. and **Karmakar, S.**, 2015. Cognitive Theories of Product Emotion and Their Applications in Emotional Product Design. *In: A. Chakrabarti (ed.), ICoRD'15 – Research into Design Across Boundaries, Volume 1, 329-340. [Print ISBN: 978-81-322-2231-6]. [Springer]*
5. Reddy, S.M., Chowdhury, A., Chakrabarti, D. and **Karmakar, S.**, 2015. Role of Colour and Form in Product Choice and Variation of Preferences Across Product Categories: A Review. *In: A. Chakrabarti (ed.), ICoRD'15 – Research into Design Across Boundaries, Volume 2, 631-640. [Print ISBN: 978-81-322-2228-6]. [Springer]*
6. Kumar, S., Sanjog, J., Patel, T., and **Karmakar, S.**, 2014. Virtual Human Modeling and Simulation in Textile Industry, *In: Proceedings of International Ergonomics Conference, HWWE-2014, (12<sup>th</sup> ISE annual Conference), IIT Guwahati, 3<sup>rd</sup> - 5<sup>th</sup> December, pp. 252 – 260. [ISBN: 978-93-392-1970-3][Mc Graw Hill Education (India) Pvt. Ltd.]*
7. Kumar, P. N., Sanjog, J., **Karmakar, S.**, 2014. Prevalence of awkward working posture and consequent discomforts in body parts among workers of cashew nut processing factories in coastal regions of eastern India, *In: Proceedings of International Ergonomics Conference, HWWE-2014, (12<sup>th</sup> ISE annual Conference), IIT Guwahati, 3<sup>rd</sup> - 5<sup>th</sup> December, pp. 671 – 673. [ISBN: 978-93-392-1970-3] [Mc Graw Hill Education (India) Pvt. Ltd.]*
8. Kumar, S., Patel, T. and **Karmakar, S.** 2014. Scenario of handloom industry: Indian perspective. *In: Proceedings of International Ergonomics Conference (HWWE: December, 3-5), Indian Institute of Technology, Guwahati, Assam, India, pp. 234-238. [ISBN: 978-93-392-1970-3] [Mc Graw Hill Education (India) Pvt. Ltd.]*
9. Sanjog, J., Patel, T. and **Karmakar, S.**, 2014. Reduction of hand grip strength as an indicator towards discomfort of upper body extremities, *In: Proceedings of International Ergonomics Conference, HWWE-2014, (12<sup>th</sup> ISE annual Conference), IIT Guwahati, 3<sup>rd</sup> - 5<sup>th</sup> December, pp. 655 – 659. [ISBN: 978-93-392-1970-3] [Mc Graw Hill Education (India) Pvt. Ltd.]*
10. Chowdhury, A., Sahoo, S.P., Chakrabarti, D. and **Karmakar, S.**, 2014. Designing of anthropometric bike headlight using cognitive ergonomics approach, *In: Proceedings of International Ergonomics Conference, HWWE-2014, (12<sup>th</sup> ISE annual Conference), IIT Guwahati, 3<sup>rd</sup> - 5<sup>th</sup> December, pp. 228 – 233. [ISBN: 978-93-392-1970-3] [Mc Graw Hill Education (India) Pvt. Ltd.]*
11. Patel, T., Sanjog, J., Sahoo, A., Das, B. and **Karmakar, S.**, 2014. Assessment of Reliability and Technical Error of Measurement Associated with Anthropometric Data Collection, *In: Proceedings of International Ergonomics Conference, HWWE-2014, (12<sup>th</sup> ISE annual Conference), IIT Guwahati, 3<sup>rd</sup> - 5<sup>th</sup> December, pp. 769 - 775. [ISBN: 978-93-392-1970-3] [Mc Graw Hill Education (India) Pvt. Ltd.]*
12. Chowdhury, A., **Karmakar, S.**, Reddy, S.M., Ghosh, S. and Chakrabarti, D., 2013. Product personality rating style for satisfaction of tactile need of online buyers- A human factors issue in the context of e-retailers' web-design. 2013 International Conference on Human Computer Interactions (ICHCI), 23<sup>rd</sup>-24<sup>th</sup> August, Chennai, India. p. 01-08. (DOI: 10.1109/ICHCI-IEEE.2013.6887784) [IEEE Xplore]
13. Udaykumar, B., Bora, A., Sanjog, J., and **Karmakar, S.**, 2013. Proactive Ergonomics through Digital Human Modeling and Simulation for Product Design Innovation: A Case Study. 2013 International Computer Science and Engineering Conference (ICSEC 2013), 4<sup>th</sup>-6<sup>th</sup> Sept., Bangkok, Thailand. p. 319-323. IEEE Catalog Number: CFP13IBE-ART (doi: 10.1109/ICSEC.2013.6694801, ISBN: 978-1-4673-5324-3) [IEEE Xplore]
14. Chowdhury, A., Reddy, S.M., **Karmakar, S.**, Ghosh, S. and Chakrabarti, D., 2013. Is Perception of Product Personality Related with Product Usability?- A Cognitive Ergonomics Perspective. *In:*



Parimalam, P., Premalatha, M.R. and Banumathi, P. (eds.), Ergonomics for Enhanced Productivity, pp. 177-182. Excel India Publishers: New Delhi.[ISBN: 978-93-82880-43-1]

15. Patel, T., **Karmakar, S.**, Sanjog, J., Kumar, S. and Chowdhury, A., 2013. Digital Human Modeling for Virtual Ergonomic Evaluation of Tractor Operator's Workplace: A Review. In: Parimalam, P., Premalatha, M.R. and Banumathi, P. (eds.), Ergonomics for Enhanced Productivity, pp. 203-208. Excel India Publishers: New Delhi.[ISBN: 978-93-82880-43-1]
16. Chowdhury, A., Ramdas, R. and **Karmakar, S.**, 2013. Muscle computer interface: A Review. In: A. Chakrabarti and R. V. Prakash (eds.), ICoRD'13, Lecture Notes in Mechanical Engineering. Springer, 411-421. [Print ISBN-13: 978-81-322-1049-8].[Springer]
17. Chowdhury, A., Reddy, S.M. and **Karmakar, S.**, 2012. Mutated/scrambled brand name and its impact on market. In: Kumar, A., Arshdeep. and Singh, K. (Eds.), *Emerging Issues in Management and Behavioural Sciences*. Delhi: Bharati Publications, 201-209. [ISBN: 978-93-81212-17-2]
18. Reddy, S.M., Chowdhury, A., Chakrabarti, D. and **Karmakar, S.**, 2012. Need of visual behavioural study of Indian consumers. In: Kumar, A., Arshdeep. and Singh, K. (Eds.), *Emerging Issues in Management and Behavioural Sciences*. Delhi: Bharati Publications, 285-293. [ISBN: 978-93-81212-17-2]
19. Patel, T., **Karmakar, S.** and Chakravorty, A., 2012. Software for Performance Prediction and Matching of Tractor-Implement System. In: Proceedings of 3<sup>rd</sup> National Conference on Emerging Trends and Applications in Computer Science (NCETACS-2012), 30-31 March, 2012, St. Anthony's College, Shillong, Meghalaya, India. p. 262-269. IEEE Catalog Number CFP1258M-PRT [Print ISBN 978-1-4577-0749-0].
20. Sanjog, J., Chowdhury, A. and **Karmakar, S.**, 2012. Industry Specific Applications of DHM. In: Karim Abdel-Malek edited 'Proceedings of the International Summit on Human Simulation 2012 (ISHS-2012)', 23-25 May, 2012, St. Pete Beach, Florida, USA, Pp.123-134.
21. Sanjog, J., Chowdhury, A. and **Karmakar, S.**, 2012. Digital Human Modeling Software in Secondary Manufacturing Sector: A review. In: Proceedings of International Conference on Recent Trends in Computer Science and Engineering (ICRTCSE-2012), 3-4 May, 2012, Chennai, Tamil Nadu, India. AEC12397.[ISBN 978-81-9089-807-2].
22. **Karmakar, S.**, Majumdar, Deepti., Pal, M. S. and Majumdar, D., 2011. Ergonomic Study of Ingress-Egress of an Army Vehicle in Simulated Environment. In: Proceedings of International Conference on Trends in Product Lifecycle, Modeling, Simulation and Synthesis (PLMSS)-2011, Bangalore, India. 69-74.