SNEHA JAIN

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LE 1 110, EPFL, CH-1015 Lausanne, Switzerland

EDUCATION

Feb 2019- Apr 2023 **Ph.D. Civil and Environmental Engineering**
Écolé Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland
Ph.D. research on discomfort glare under the direction of Prof. Marilyne Andersen and Dr. Jan Wienold. Dissertation title: Influence of macular pigment and color of (day)light on discomfort glare.

Sep 2016- Dec 2018 **M.S. Information Technology in Building Science (GPA: 9.6/10)**
International Institute of Information Technology (IIIT), Hyderabad, India
Master thesis under the direction of Dr. Vishal Garg. Dissertation title: Daylighting estimation for window shade control using high dynamic range imaging

Aug 2010- Jan 2015 **B.Arch. Architecture (GPA: 8.5/10)**
Maulana Azad National Institute of Technology (MANIT), Bhopal, India

PROFESSIONAL EXPERIENCE

Feb 2018- Aug 2018 **Research Fellow**
Lawrence Berkeley National Laboratory (LBNL), California, United States
Work: Implementation of HDR images to measure several aspects of daylight such as glare, illuminance, CCT and spectrum.

Oct 2015- Aug 2016 **Virtual Construction and Design engineer**
Vconstruct Pvt. Ltd., Pune, India
Work: Project lead for facility management, BIM co-ordination, Quality assurance, 4D-simulations, 3D scanning and virtual mock-ups for various construction projects.
Major projects: Facebook data center, LinkedIn campus, Tehama residential towers.

Jan 2015- Sep 2015 **Architect**
Studio Assemble, Sikkim, India
Work: Private residence design and working drawing creations

TRANSDISCIPLINARY RESEARCH PROJECTS

2019-2022 Collaborating group: Faculty of Biology and Medicine at the University of Lausanne and Jules-Gonin Ophthalmic Hospital
Work: Evaluation of anatomic-physiologic features of the human eye which influence spectral discomfort glare sensitivity of humans

2020-2022 Collaborating group: Nanotechnology for Solar Energy Conversion group at EPFL
Work: Characterization of the spectral properties of building façade glazing for daylight modulation and its influence on occupants

2022-ongoing Collaborating group: Institute of Experimental Psychology at the University of Lausanne
Work: Evaluation of gaze direction and pupillary light responses induced by primary colored daylit environment and their relation to discomfort glare experience

PUBLICATIONS

Peer-reviewed Journals

S Jain, J Wienold, M Lagier, A Schuler, M Andersen, Perceived glare from the sun behind tinted glazing: comparing blue vs. color-neutral tints, Building and Environment, 2022 (Under review).

S Jain, J Wienold, A Kawasaki, C Eandi, S Gisselbaek, M Andersen, (Non)Influence of macular pigment on the sensitivity to discomfort glare from daylight in workplace scenario, Scientific Reports by Nature (Submitted Sep 2022).

S Jain, J Wienold, M Andersen, Influence of color of glazing on human perception of discomfort glare from daylight, Color Research & Applications (Submitted Sep 2022).

G Quek, **S Jain**, C Karmann, C Pierson, J Wienold, M Andersen, A critical analysis of questionnaire items for discomfort glare studies in daylit spaces, Lighting Research & Technology 2022 (Under Review)

S Jain, C Karmann, J Wienold, Behind electrochromic glazing: Assessing user's perception of glare from the sun in a controlled environment, Energy and Buildings, Feb 2022.

S Jain, and V Garg. A review of open-loop control strategies for shades blinds and integrated lighting by use of real-time daylight prediction methods**.** Building and Environment, May 2018.

Peer-reviewed Conferences

S Jain, J Wienold, M Andersen, Comparison between CIE 2° and 10° field photopic luminosity functions V(λ) for calculating daylight discomfort glare metrics, Lux Europa 2022, Prague, Czech Republic.

S Jain, J Wienold, M Andersen, Effect of window glazing color and transmittance on human visual comfort, PLEA 2022, Santiago, Chile.

J Wienold, **S Jain,** M Andersen, Transmittance thresholds of electrochromic glazing to achieve annual low-glare work environments, Nordic IBPSA 2022, Copenhagen, Denmark.

S Jain, J Wienold, M Andersen, On Sensitivity to Glare and Its Relationship with Macular Pigment, PROCEEDINGS of the Conference CIE 2021, Malaysia.

S Jain, C Karmann, J Wienold, Subjective assessment of visual comfort in a daylit workplace with an electrochromic glazed façade, Journal of Physics: Conference Series, 2021.

S Jain, J Wienold, M Andersen, Glare assessment in a daylit workplace from a physiological perspective, ANFA 2021 Symposium–Quantified Buildings, Quantified Self, California.

S Jain, L Fernandes, C Regnier, V Garg. Circadian lighting in a space daylit by a tubular daylight device. Asia Conference of International Building Performance Simulation Association ASim 2018, Hong Kong.

Dissertations

S Jain, Daylighting estimation for window shade control using high dynamic range imaging, 2019, IIIT Hyderabad, India.

S Jain, Influence of macular pigments and color of (day)light on discomfort glare (ongoing), 2023, EPFL, Switzerland.

INVITED TALKS & PRESENTATIONS

- **S Jain**, Influence of Daylight Spectrum filtered by colored glazing on discomfort glare perception, Daylight Academy Annual Conference & General Assembly, October 2022, Zürich, Switzerland
- **S Jain**, Does glazing color influence our perception of discomfort glare from daylight? Build for Life, VELUX Daylight Symposium 2021, Copenhagen, Denmark.
- **S Jain**, J Wienold, Glare behind blue (electrochromic) glazing, 19th Annual International Radiance Workshop, Bilbao, Spain, 2021

TEACHING & SUPERVISION

2022 **Co-Instructor**
Center of Environment Planning and Technology (CEPT), Ahmedabad, India
Summer school on "Daylight beyond codes: Decoding daylight in Indoor spaces"
Level: Undergraduate and graduate students (±20)

2022 **Supervisor**
EPFL, Switzerland
Student: Oscar Fischer, MSc Microtechnology
Master's Thesis: Evaluation of physiological and facial responses to discomfort glare under colored light sources

2021 **Supervisor**
EPFL, Switzerland
Students: Kaan Okumus, Mihaela-Diana Zanoaga, Roxane Burri, MSc (varied Engineering degrees)
Semester Project: Deep Learning-based Discomfort Glare Detection

2021 **Co-Supervisor**
Center of Environment Planning and Technology (CEPT), Ahmedabad, India
Student: Macha Bhargav, MTech Building Energy Performance
Master's Thesis: Exploring the capabilities of Raspberry Pi HQ camera for generating luminance maps in indoor daylit environments.

2019-2021 **Teaching Assistant**
EPFL, Switzerland
Course: "Comfort and Architecture: Sustainable Strategies"
Level: Graduate students (±40)

2018 **Co-Instructor**
Workshop on "Building Simulation for Energy Conservation Building Codes 2017", Hyderabad, India

2017 **Teaching Assistant**
IIIT Hyderabad, India
Course: "C Programming for Engineers"
Level: Graduate students (±30)

2017 **Supervisor**
IIIT Hyderabad, India
Students: Three undergraduate students from BTech in Computer Science, Electronics Engineering and Architecture
Project: Summer internship on "Smart daylight glare control system" funded by Sage glass.

FELLOWSHIPS & AWARDS

Recipient of BHAVAN Fellowship (Building Energy Efficiency Higher and Advanced Network) from the Department of Science & Technology (DST), India for a six-month research fellowship at LBNL, California, USA.

Best paper award at ASIM 2018 conference in Hong Kong for the paper "Circadian lighting in a space daylit by a tubular daylight device".

COMMITTEES & SERVICES

International Scientific Committee Member for the CIE TC3-57 on “Eye-physiology based glare sensation model”.

IEA (International Energy Agency) member on the task “Low Carbon, High Comfort Integrated Lighting”.

Reviewer for Scientific Journals: Building and Environment and Journal of Building Engineering

SKILLS AND INTERESTS

Languages	English (fluent), Hindi (mother tongue), French (Basic)
Simulation & modelling	BIM modelling, Radiance, Climate studio, DIVA, Autodesk Revit, AutoCAD, Sketchup, Design Builder, DIALux
Scripting	Python, R, MATLAB, C++, Bash
Technical	Computational statistics, Psychophysical experiment design, Photometry, HDR imaging
Interests	Daylighting, Building science, Indoor comfort, Sustainability, Artificial Intelligence, BIM