

List of 10 Best Papers of the Applicant highlighting the important contributions in them briefly

1. Sangwan VS, **Basu S**, MacNeil S, Balasubramanian D. Simple limbal epithelial transplantation (SLET): a novel surgical technique for the treatment of unilateral limbal stem cell deficiency. **Br J Ophthalmol**. 2012 Jul;96(7):931-4. doi: 10.1136/bjophthalmol-2011-301164.
Contribution and Impact: *This paper was the first description of a novel technique of corneal stem cell therapy (SLET) pioneered by Dr Basu along with his mentor Dr VS Sangwan, in a clinical case series. This work is considered seminal in the field of stem cells and regenerative ophthalmology and has been cited **306** times since publication.*
2. **Basu S**, Hertszenberg AJ, Funderburgh ML, Burrow MK, Mann MM, Du Y, Lathrop KL, Syed-Picard FN, Adams SM, Birk DE, Funderburgh JL. Human limbal biopsy-derived stromal stem cells prevent corneal scarring. **Sci Transl Med**. 2014 Dec 10;6(266):266ra172. doi: 10.1126/scitranslmed.3009644.
Contribution and Impact: *This paper describes the preclinical study on unique mesenchymal stem cells derived from the eye, which demonstrates the efficacy of these cells in preventing corneal scarring, a major cause of blindness worldwide. Dr Basu conducted both the invitro and in vivo animal studies and this work is considered seminal in the field of stem cells and regenerative ophthalmology and has been cited **155** times since publication.*
3. **Basu S**, Sureka SP, Shanbhag SS, Kethiri AR, Singh V, Sangwan VS. Simple Limbal Epithelial Transplantation: Long-Term Clinical Outcomes in 125 Cases of Unilateral Chronic Ocular Surface Burns. **Ophthalmology**. 2016 May;123(5):1000-10. doi: 10.1016/j.optha.2015.
Contribution and Impact: *This paper describes the successful long-term clinical outcomes of a novel technique of corneal stem cell transplantation (SLET) developed in India. Dr Basu spearheaded this clinical translational work and this paper is considered seminal in the field of stem cells and translational medicine and has been cited **148** times since publication.*
4. Shanbhag SS, Nikpoor N, Rao Donthineni P, Singh V, Chodosh J, **Basu S**. Autologous limbal stem cell transplantation: a systematic review of clinical outcomes with different surgical techniques. **Br J Ophthalmol**. 2020 Feb;104(2):247-253. doi: 10.1136/bjophthalmol-2019-314081.
Contribution and Impact: *This systematic review shows that SLET, a corneal stem cell therapy developed in India, has better outcomes than other conventional techniques. This work has been cited **27** times since publication.*
5. Shukla S, Shanbhag SS, Tavakkoli F, Varma S, Singh V, **Basu S**. Limbal Epithelial and Mesenchymal Stem Cell Therapy for Corneal Regeneration. **Curr Eye Res**. 2020 Mar;45(3):265-277. doi: 10.1080/02713683.2019.

Contribution and Impact: This explains the differences between corneal epithelial and stromal/mesenchymal stem cells and their respective applications in corneal regeneration. This work has been cited **10** times since publication.

6. Sangwan VS, **Basu S**, Vemuganti GK, Sejpal K, Subramaniam SV, Bandyopadhyay S, Krishnaiah S, Gaddipati S, Tiwari S, Balasubramanian D. Clinical outcomes of xeno-free autologous cultivated limbal epithelial transplantation: a 10-year study. **Br J Ophthalmol**. 2011 Nov;95(11):1525-9. doi: 10.1136/bjophthalmol-2011-300352.

Contribution and Impact: This paper describes the clinical efficacy of the first stem cell trial in ophthalmology in India, in a large cohort of 200 patients followed-up up to 10 years. This seminal work has been cited **205** times since publication.

7. **Basu S**, Ali H, Sangwan VS. Clinical outcomes of repeat autologous cultivated limbal epithelial transplantation for ocular surface burns. **Am J Ophthalmol**. 2012 Apr;153(4):643-50, 650.e1-2. doi: 10.1016/j.ajo.2011.09.016.

Contribution and Impact: In this follow-up to the previous paper, Dr Basu described that repeating autologous limbal stem cell therapy improves outcomes, rather than the reverse, which was thought to be true up until that point. This work has been cited **115** times since publication.

8. **Basu S**, Serna-Ojeda JC, Senthil S, Pappuru RR, Bagga B, Sangwan V. The Aurolab Keratoprosthesis (KPro) versus the Boston Type I Kpro: 5-year Clinical Outcomes in 134 Cases of Bilateral Corneal Blindness. **Am J Ophthalmol**. 2019 Sep;205:175-183. doi: 10.1016/j.ajo.2019.03.016.

Contribution and Impact: This paper describes the clinical results of an Indian version of an artificial corneal implant, the first of its kind to be studied in India. This work is considered innovative and has been cited **17** times since publication.

9. **Basu S**, Nagpal R, Serna-Ojeda JC, Bhalekar S, Bagga B, Sangwan V. LVP keratoprosthesis: anatomical and functional outcomes in bilateral end-stage corneal blindness. **Br J Ophthalmol**. 2018 Jun 11;bjophthalmol-2017-311649. doi: 10.1136/bjophthalmol-2017-311649.

Contribution and Impact: This paper describes the clinical results of a completely novel Indian artificial corneal implant, to treat severe corneal blindness that is otherwise untreatable even by corneal transplantation. This work has been cited **7** times since publication.

10. Donthineni PR, Kammari P, Shanbhag SS, Singh V, Das AV, **Basu S**. Incidence, demographics, types and risk factors of dry eye disease in India: Electronic medical records driven big data analytics report I. **Ocul Surf**. 2019 Apr;17(2):250-256. doi: 10.1016/j.jtos.2019.02.007.

Contribution and Impact: This is the first paper to describe the incidence and risk-factors for dry eye disease, a silent modern epidemic in India. This work has raised

*awareness about the extent of the problem in India and has been cited **43** times since publication.*

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