The mixing instability hypothesis revealed an unprecedented link between the law of the wall and the mixing instability. The hypothesis recovers the classical logarithmic law within the overlap layer. Particularly, the amplitude of waves within the overlap layer was found to obey a unique law with the wall-normal distance. More broadly, the mixing instability hypothesis explains the law of the wall in near-wall, overlap, and wake layers. Rigorous testing of the computational MVPs with the experimental observations over a broad range of Reynolds numbers supports the mixing-instability hypothesis (see Fig. 2).

In essence, the mixing-instability hypothesis offers a new mechanism of the momentum exchange in a turbulent flow, calling for a revision of the traditional mixing-length hypothesis, which has persisted in standard textbooks of turbulence for about nine decades.

Reference:
Ali SZ, Dey S. The law of the wall: A new perspective. Physics of Fluids, American Institute of Physics, 32, 121401 (2020).

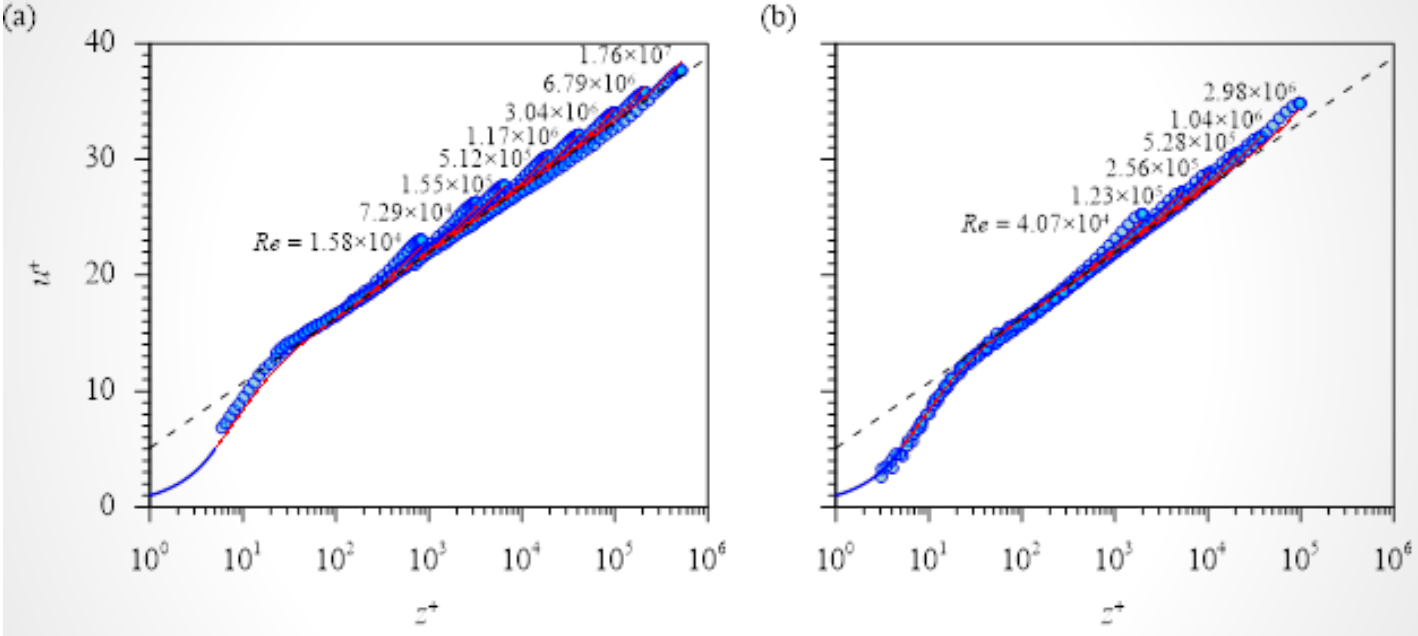

Fig. 2: Comparison of the computational MVPs with the experimental data obtained in a superpipe facility using (a) pitot probe and (b) nano-scale thermal anemometry probe.

Research & Innovations - Q4
Preserving 'Dhokra Craft', an IIT Hyderabad endeavor

Prof Deepak John Mathew & Team
Department of Design
KID: 20210416

The Design Intervention workshop by the Department of Design, aimed at safeguarding the Dhokra crafts of Ojha Gonds Community in Telangana.

Highlights:

- Community building and peer learning for the Ojha craftsmen.
- Creating Sustainable livelihood opportunities for the Ojha craftsmen.
- Documenting the traditional process of the metallurgy and regional artifacts of the Raj Gonds of Adilabad district.
- Create a digital repository of the traditional artifacts to trace the design evolution in the Ojha Craft.
- Encourage younger generations of the Ojha families to adapt and safeguard their ancestorial crafts practices.
- Generate awareness of the traditional craft practices of the Ojhas' among the common people of the region.

Professor Deepak John Mathew, Department of Design, IIT Hyderabad, along with his team has conducted a design intervention workshop on Dhokra crafts of Ojha Gonds of Adilabad as a part of an ongoing project under his supervision "Tangible and Intangible Cultural Heritage of Telangana" supported by Science and Heritage Research Initiative Programme, Design Innovation Centre, and Institutional Innovation Centre IIT Hyderabad.

Read More: https://tinyurl.com/yc7k6j6x

View Video Abstract:
Part-1 (Workshop Objectives):
https://youtu.be/g19qrmdOTzI
Part-2 (Brief on Dhokra Casting):
https://youtu.be/GEnaazvezf4

The workshop was focusing on training the younger generations of the Ojha community in the traditional Dhokra Crafts under the supervision and training of the Master Craftsman. Traditionally the artifacts were majorly created for the ritualistic purposes of the Raj Gonds, which is a part of the Intangible cultural heritage of the Raj Gonds of Telangana. The workshop aimed at retaining and sustaining the traditional craft practices of the Ojha's and to provide them opportunities to generate livelihood from their ancestorial occupation of Dhokra crafts. The workshop also had an objective of community building, and peer learning, skill development, and training. Thus, the Master Craftsman was chosen from Ojha Community itself.

Snapshot from the workshop