

# **Kaw Memorial Colloquium**

**Devising a storm in a cup:  
Relativistic electron beams with mJ lasers**

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Intense ultrashort laser fields are known to generate hot dense plasmas by instantaneous deposition of energy in a small volume in ultrashort times. The phenomenon is intrinsically non-linear as all the parameters Temperature, Pressure, Current density etc., change very dramatically at each point of the microscopic space in femtosecond time scales. With the best efforts thus far, it is known that reaching relativistic electron temperatures mandatorily require relativistic laser intensity. This paradigm is broken in our recent experiments carried out in microplasmas generated with liquid droplets. Shaping the droplet surface into a micro-cup, nonlinear plasma excitations are shown to generate MeV electrons even with mJ laser energies. The resultant multi-kHz electron/x-ray beams could be extremely useful for radiography, imaging and microscopy.



***Monday, Jul 3<sup>rd</sup> 2023***

***4:00 PM (Tea / Coffee 03.45 PM)***

***Auditorium, TIFR-H***