

## CFD-Assisted Process Design

- Your lab process might be performing beautifully, but your ultimate target is to replicate the same performance at the commercial scale.
- Here are some of the challenges in commercial process equipment design:
  - ✗ Mixing intensity and turbulence are highly complex and not directly scalable;
  - ✗ The overall performance could be governed by additional phenomena at large scale, e.g., the process can become mass or heat transfer limited;
  - ✗ In multiphase systems, the extent of interfacial dispersion highly influences the outcome. In most multiphase cases, the large scale behavior does not correlate well with the lab scale results;
  - ✗ Your process is unique and there is no off-the-shelf equipment meeting your requirements;
  - ✗ Pilot plant testing is useful but has to be used with caution to prevent cost overruns.
- So, the question is: How can we increase the reliability of commercial process equipment design, and, at the same time, minimize the required development time and cost?
- Here is the answer:
  - ✓ Computational Fluid Dynamic (CFD) is a well-established and powerful tool for commercial equipment design and scale up, from concept development and pilot equipment design to detailed design and optimization at commercial scale;
  - ✓ We work with various CFD techniques and state-of-the-art software and hardware;
  - ✓ We specialize in the most complex flow systems including multiphase systems, particulate flows, free-surface flows, structure-induced mixing, combustion, and more ...;
  - ✓ We rely on our industrial expertise and professional experience in chemical, oil & gas, metallurgical, energy & power, automotive and environmental sectors;
  - ✓ We understand commercial constraints and are committed to deliver a pragmatic, timely and cost effective solution that you can actually use!
  - ✓ You can do better. We can help.

### Contact Us

Telephone: (905) 510 0719

Email: [info@greentwirlenergy.com](mailto:info@greentwirlenergy.com)