Viraj Pawar

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ABOUT ME

Dedicated and detail-oriented Process & CFD Engineer with an experience of a year in field of chemical engineering having publications and niche interest in the field of Computational Fluid Dynamics (CFD), Multiphase Flows, Modeling and Simulation, Heat and Mass transfer and Plant Designing.

EDUCATION

Wroclaw University of Science and Technology — **Wroclaw, Poland**

Masters in Chemical & Process Engineering — *(Expected) Graduation Date: July 2023*

Mumbai University — **Mumbai, India**

Bachelors of Chemical Engineering — *Graduation Date: July 2019*

WORK EXPERIENCE

Converge Engineering PVT. LTD. — **Mumbai, India**

Process Engineer — *Apr 2020 - Mar 2021*

- Worked on the development of As-built PID of fuel and Lube refinery's tank farms, condensate recovery system, steam network across refinery, salt water cooling tower and its network across refinery.
- Performed Updation and mark up of nitrogen generation plant, DM plant, LPG bullets, bearing cooling tower and boiler house.
- Reviewed the performance of the existing PID while coordinating with draughting department

PUBLICATIONS

1) Teli, Shivanand M., **Pawar, Viraj S**. and Mathpati, Channamallikarjun. "Experimental and Computational Studies of Aerated Stirred Tank with Dual Impeller" *International Journal of Chemical Reactor Engineering*, vol. 18, no. 3, 2020, pp. 20190172. https://doi.org/10.1515/ijcre-2019-0172

2) Aniket. A. Kule, **Viraj. S. Pawar**, & S. H. Gharat. (2019). GRANULAR SEGREGATION OF NON-SPHERICAL PARTICLE IN A QUASI 2-DIMENSIONAL SYSTEM. International Journal of Multidisciplinary Research and Modern Education, 5(2), 9–13. https://doi.org/10.5281/zenodo.3514315

CONFERENCES

1) Wojciech Ludwig & **Viraj Pawar** "**CFD INVESTIGATION ON SOLID CIRCULATION RATE IN A MODIFIED WURSTER APPARATUS FOR DRY COATING**". 24th Polish Conference of Chemical and Process Engineering, Szczecin, Poland.

2) Teli, Shivanand M. & **Pawar, Viraj S** "**Investigation of Mass Transfer Coefficient and Bubble Size Distribution in Stirred Tank Reactor using Dual-Rushton Impellers**". 14th SCHEMCON by Indian Institute of Chemical Engineers (IICHE), Mumbai, India.

3) **Pawar, Viraj S &** Teli, Shivanand M "**Effect of Impellers' position on Volumetric mass transfer coefficient and Bubble size distribution in a stirred tank reactor using Dual configuration Rushton turbines**" **.** 14th "PRAKALP" Chemical & Process Engineering conference, Pune, India.

CERTIFICATION COURSES

1) **Advanced Process Engineering**

Calculations of Line sizing, Control valve sizing, Separator sizing, Pressure safety valve sizing Pump Sizing, Separator sizing and Orifice sizing using Excel and ASPEN HYSYS & Flarenet design. Knowledge of International Engineering standards **ISA** 75.01.01, **API** 14E, **API** 521, **API** 520 part I, **API** 12J, **IS0**_5167_2. Rating of Distillation columns, heat exchangers. PFD & PID in AutoCAD

2) **Fundamentals of Computational Fluid Dynamics**

Basics of Momentum, Mass & Energy equation, Discretizing 1D & 2D systems, Finite volume Method (FVM) & Finite difference method (FDM), Analyzing 2d heat-diffusion

3) **Hardhat Engineer**
Legends & Codes of PID, Layout of PID diagram, Control Philosophy of process, Building a green field project PID.

SCIENTIFIC PROJECTS

1) **Bachelors of Chem. Engg.** University of Mumbai (2016 -2019)
   1) **Experimental Analysis of Mass transfer in Lab scale External Loop-Air lift reactor**.
      i. Study & Calculations of Mass Transfer coefficient for different hydrodynamic conditions.
      ii. Photographic Analysis of Bubble size distribution for understanding the phenomenon of interfacial area
      iii. Experimental Investigation of surface tension property of Mass transfer coefficient & Gas holdup.

   2) **Computational & Experimental development of Multiphase Stirred Tank Impeller with dual Impeller**
      i. Design calculations for tank design, Impeller, Baffles, Sparger and Shaft Development of Lab scale Stirred tank reactor.
      ii. Developed the computational Model of Stirred tank in ANSYS CFX.
      iii. Investigated influence of Impellers spacing of Mass transfer coefficient & validated it by performing waste water treatment operation.
      iv. Literature survey.

2) **Masters of Chem & Proc. Engg.** Wroclaw University of Science & Technology (2022-2023)
   1) **Molecular Simulation for adsorption of nitrogen on carbon.**
      i. Developing Monte-Carlo Simulation Model for adsorption of nitrogen on carbon.
      ii. Examining square shape pore & size's influence of adsorption isotherm.

   2) **Performance of Modified Wurster Apparatus by simplified DEM model**
      i. Developing of Discrete Phase model in ANSYS FLUENT for the calculations of Solid circulation rate in Wurster apparatus.
      ii. Model geometrical alterations in Design modeler.
      iii. MATLAB graphical analysis for the determination of particles velocity and particles volume fraction.
      iv. Post-Processing of the calculated simulations.
      v. Literature survey.

ACHIEVEMENTS

1) **2nd Best** research award for paper presentation from the pool of 200 presenters at national level conference organized by Indian Institute of Chemical Engineers.
2) **2nd Runner** up inter-college football team.

SOFTWARE & SKILLS

PROGRAMING: MATLAB, POLYMATH.
SOFTWARE PACKAGES: ANSYS FLUENT&CFX, ASPEN HYSYS, EDR & AUTOCAD 3-D, MS OFFICE.
SKILLS: Critical thinking, Time management, Self learning, Ability to work in a team.

LANGUAGE

English - C1 (IELTS Band – 7), Marathi - B2, Hindi - B2, German - A1 (University).

REFERENCES

1) Dr. Hab. Eng. Wojciech Ludwig (Professor) – wojciech.ludwig@pwr.edu.pl
2) Dr. Shivanand Teli (Ex-Associate Professor, Senior Engineer) – shivanand.Teli@3dengg.com
3) Mr. Ramana Natesan (Technical Head at Converge Engineering) – ramananatesan@converge.net.in