Giuseppe Porpora

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Education

- **November 2019 – April 2023**
  PHD STUDENT IN PRODUCTS AND INDUSTRIAL PROCESSES ENGINEERING
  UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II, ITALY
  Position founded by Procter and Gamble (P&G).
  Doctor Europaeus qualification.
  Thesis Title: "Experiments and Modelling of Solvent Sealing of Polymeric Films".
  Advisors: Francesco Greco, Raffaele Pastore.
  Brief Description: Modeling of diffusion and swelling for solvent-sealing applications in polymer films, aiming to reduce Plant Down Time in Laundry Detergent Pods' production and to increase the overall process efficiency. Experiments of optical microscopy, optical tomography, material characterization and gravimetric sorption, with ensuing validation of the theoretical modeling. Experiments have been conducted at P&G facilities in Bruxelles and Frankfurt.
- **September 2016 – March 2019**
  MSC DEGREE IN CHEMICAL EGINEERING (EQF LEVEL 7)
  UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II, ITALY
  Thesis Title: "Solvent-assisted welding of polymeric films".
  Final Mark: 110/110.
  Principal subjects covered: Colloids, Soft Matter, Chemical Plant Design, Combustion, CFD.
- **September 2013 – November 2016**
  BSC DEGREE IN CHEMICAL EGINEERING (EQF LEVEL 6)
  UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II, ITALY
  Final Mark: 103/110.
  Principal subjects covered: Mathematics and Physics, Thermodynamics, Chemistry, Chemical Processes.
- **2009 – 2013**
  HIGH SCHOOL GRADUATION
  LICEO SCIENTIFICO RENATO CACCIOPPOLI, ITALY
  Final Mark: 100/100

Work Experience

- **November 2021 - May 2022: R&D Associate Scientist in P&G**
  Material characterization and adhesion strength measurements of polymeric films (Bruxelles/Frankfurt)
- **June 2019 – September 2019 – R&D Associate Scientist P&G**
  Creation of test methods for solvent diffusion in polymeric films. Development of an user-friendly image analysis software, for wider use in R&D unit (R&D site, Bruxelles)
- **June 2018 – November 2018 – R&D Internship P&G**
  Building a mathematical model for solvent-assisted adhesion of polymeric films. Final aim was to investigate causes for poor sealing occurring in Pods' production (R&D site, Bruxelles)

Language Skills

- Italian mother tongue
- Other Languages: English, CEFR level B2; French, CEFR level B1

Communication and organizational skills

- Good and effective communication skills gained through experiences as team-member of study groups, competing in university projects.
- Good problem-solving capability.

Digital competencies

- Mathematical modelling, data and image analysis with Python (Numpy, Scipy, Pandas) and MatLab
- Image Analysis with ImageJ Macro
- Molecular Dynamics simulation with LAMMPS
- Computational Fluid Dynamics with Comsol
- Chemical Processes Simulation with Aspen Plus
- Very good command of Microsoft Office tools (Word, Excel, Power Point)
- Knowledge of C++ programming language

Publications

- Porpora, G., Rusciano, F., Guida, V., Greco, F., & Pastore, R. (2020). Understanding charged vesicle suspensions as Wigner glasses: dynamical aspects. *Journal of Physics: Condensed Matter*, *33*(10), 104001. **https://iopscience.iop.org/article/10.1088/1361-648X/abce6f**
- Porpora, G., Rusciano, F., Pastore, R., & Greco, F. (2022). Comparing microscopic and macroscopic dynamics in a paradigmatic model of glass-forming molecular liquid. *International Journal of Molecular Sciences*, *23*(7), 3556. **https://doi.org/10.3390/ijms23073556**
- Porpora, G., Gabriele, A., Pastore, R., & Greco, F. (2023). Minimal and versatile description of diffusion and swelling in polymer-solvent systems: Modeling and experimental validation. *Phys. Rev. Materials 7,* 115602. **https://doi.org /10.1103/PhysRevMaterials.7.115602**
- Porpora, G., Gabriele, A., Pastore, R., & Greco, F. (2023). Experimental characterization and modelling of the absorption/swelling process in a water-PolyVinylAlcohol system. In preparation.

Personal interests and competences

- Building Arduino and RaspberryPi projects for IoT and home automation