Maria Teresa Vespucci is associate professor in Operations Research at the Department of Management, Information and Production Engineering, University of Bergamo. She received her PhD in Numerical Optimization at the University of Hertfordshire, UK (supervisor: Prof. L.C.W. Dixon). Her main research interests are in the areas of linear algebra, mathematical programming model (mixed-integer linear, nonlinear and stochastic), optimization algorithms and applications in the industrial sector and in the energy sector:

A) linear algebraic systems and optimization
   - Krylov methods: main results published in the monograph *Krylov solvers for linear algebraic systems*, Elsevier, 2004, coauthored with Charles G. Broyden
   - vectorization of algorithms for large dimension systems of linear algebraic equations
   - Truncated-Newton methods
   - specialized algorithms for nonlinear least squares problems with large residuals at the solution
   - applications of stochastic programming, risk measures

B) applications in the industrial sector
   - optimal control parameters of a car engine to minimize fuel consumption under pollutants emission constraints

C) applications in the energy sector
   - mathematical models for the clearing of the Italian electricity market, with zonal sell prices for power generators and uniform purchase price for consumers: two Italian patents (n. 102017000086574 11/11/2019 and n. 102017000086609 21/09/2020) have been obtained for electricity market clearing procedures based on these models (authors: Vespucci MT, Pisciella P, Davò F, Siface D)
   - production scheduling of hydro- and thermo-electric generation units in a liberalized electricity market
   - stochastic decision-support models for a natural gas retailer with temperature and oil prices scenarios
   - multi-stage stochastic models for the daily coordination of wind power plants and pumped storage hydro power plants
   - stochastic decision-support models for a hydro power producer operating on the electricity derivative market for risk hedging
   - models for determining optimal strategic decisions of a dominant producer in a liberalized electricity market
   - equilibrium models for oligopolistic electricity markets
   - software tools for technical and economical evaluation of a residential trigeneration district
   - nonlinear optimization models for the optimal operation of power distribution networks with distributed generation and storage devices
   - deterministic and stochastic models for energy efficiency in buildings
   - forecast of electricity market prices
   - forecast of wind power and solar power production
   - two-stage stochastic programming models for power generation and transmission capacity expansion problems
   - stochastic programming simulation models for analyzing the evolution of the power sector in medium and long term
   - stochastic programming models for integrating electricity and gas in the power sector (power-to-gas)

Since 2001 she has been scientific responsible of research contracts with RSE-Ricerca sul Sistema Energetico S.p.A., DFC Economics (Milano), CENSES (Norway), ENEA-Ricerca sul Sistema Elettrico, CESI-Centro Elettrotecnico Sperimentale Italiano.

She is member of the organizing committee of GEM - Green Energy Management Summer School and Winter School, University of Milano-Bicocca.