Nazan *Koca*, PhD

Senior Technology Scout · Materials Researcher

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01 PROFILE

A **technology scout** and materials researcher with a **PhD in Mechanical & Industrial Engineering**. From developing **sustainable, bio-derived packaging materials** in the lab to scanning the horizon for **emerging technologies** at Bright Society on the High Tech Campus Eindhoven — always connecting science to what industry needs next.

02 EXPERIENCE

2024 — Now

Technology Scout → Senior Technology Scout

Bright Society · High Tech Campus Eindhoven

Scouting, assessing and translating emerging technologies for leading high-tech companies. Promoted to Senior Technology Scout in December 2025.

- Scan the global technology landscape — literature, patents, startups and university research — against clients' innovation roadmaps.
- Assess technology maturity (TRL) and fit; distil findings into clear recommendations for R&D and engineering stakeholders.

2020 — 2024

PhD Researcher — Roma Tre

Università degli Studi Roma Tre, Rome

Bio-derived PLA/PBS blends with high levels of secondary raw material — mechanically recyclable bioplastics as an end-of-life alternative to composting.

- Twin-screw compounding, cast and blown film extrusion; recycling simulated through repeated extrusion cycles.
- First-author and co-authored papers in the Journal of Applied Polymer Science and Polymer Engineering & Science.

2021 — 2023

Experimental Consultant

Bioware S.R.L., Rome

- Developed compostable, bio-derived plastics for thermoforming and injection molding — from pellet compounding to finished container.
- Characterized pellets, films and trays against industry standards; authored production and characterization reports.

2015 — 2016

Project Assistant

Izmir Institute of Technology (IZTECH)

TUBITAK project on thin edible coatings for fresh-cut produce by layer-by-layer deposition: experimental design, statistical analysis, paper drafting.

2013

Intern Food Engineer

KACMAZLAR Food Trade Company, Malatya

Quality evaluation of dairy products (pH, microbiology, sensory) and process optimization for cheese and yogurt production.

03 EDUCATION

2020 — 2024

PhD in Mechanical & Industrial Engineering

Università degli Studi Roma Tre, Rome

> Thesis: "The development of bio-derived polymeric blends based on PLA/PBS with a high level of secondary raw material for food packaging application."

2015 — 2019

MSc Food Engineering · GPA 3.71/4.00, magna cum laude

Izmir Institute of Technology (IZTECH)

> Thesis: "Structure and gas transmission properties of surface-modified food packaging materials by layer-by-layer assembly" — published in *Colloids and Surfaces A* (2022).

2010 — 2014

BSc Food Engineering · GPA 3.52/4.00, 2nd of department

Inonu University, Malatya

2013

Erasmus Programme — Nutrition & Health

Hamburg University of Applied Sciences (HAW Hamburg)

04 TOOLKIT

Scouting	Technology landscaping · TRL assessment · Startup scouting · Patent & literature search · Market research · Due diligence
Processing	Twin-screw compounding · Cast extrusion · Blown film extrusion · Thermoforming · Injection molding · Mechanical recycling · Layer-by-layer assembly
Characterization	DSC · FTIR · UV-Vis · Tensile testing · Capillary rheometry · MFR · HDT & Vicat · AFM · SEM
Materials	PLA · PBS / PBSA · PHAs (P3HB4HB, PHBH) · Thermoplastic starch · BOPP · Biopolymer coatings
Software	Design of Experiments · Minitab · OriginPro · Nanoscope Analysis · MS Office & Project Server · EndNote · Mendeley

05 PUBLICATIONS

Koca, N., Aversa, C., Barletta, M. (2023)

Blown film extrusion of poly(lactic)acid/poly(3-hydroxybutyrate-4-hydroxybutyrate) blends for improved toughness and processability

Polymer Engineering & Science, 63(10), 3300–3312

Koca, N., Aversa, C., Barletta, M. (2023)

Recycling of poly(lactic acid)/poly(butylene succinate) (PLA/PBS) blends with high amounts of secondary raw material

Journal of Applied Polymer Science, 140(45)

Aversa, C., Barletta, M., Koca, N. (2023)

Processing PLA/P(3HB)(4HB) blends for the manufacture of highly transparent, gas barrier and fully bio-based films for compostable packaging applications

Journal of Applied Polymer Science, e53669

Genovesi, A., Koca, N., Barletta, M. (2023)

Extrusion and thermoforming of poly(butylene succinate–co-butylene adipate) (PBSA)/poly(3-hydroxybutyrate–co–3-hydroxyhexanoate) (PHBH) biobased blends for the fabrication of disposable packaging

Journal of Applied Polymer Science

Gisario, A., Aversa, C., Barletta, M., Cappiello, G., Koca, N. (2023)

Ternary blends of thermoplastic starch (TPS) with poly(lactic acid) (PLA) and poly(butylene succinate-co-adipate) (PBSA): design, processing and characterization of home compostable materials

Preprint

Koca, N., Bayramoğlu, B. (2022)

Layer-by-layer assembly of lysozyme with iota-carrageenan and gum Arabic for surface modification of food packaging materials with improved barrier properties

Colloids and Surfaces A: Physicochemical and Engineering Aspects, 639, 128391

Koca, N., Bayramoğlu, B. (2018)

Development and characterization of surface-modified food packaging materials from lysozyme and gum arabic by layer-by-layer assembly

5th International ISEKI-Food Conference, Stuttgart — oral presentation

06 CERTIFICATIONS

Project Management — Prof. Itziar Goicoechea, University of Vigo, Spain (2022)

Driving Licence B

07 LANGUAGES

Turkish — native

English — professional

Italian — basic

German — basic