



COST ACTION GREENERING – DATA COLLECTION

First name, Family Name: Atıf Emre, DEMET

Type (Academic or Industrial): Academic

Country: Turkey

Leadership position in the COST: Co-leader of WG2

Working Group in which you are involved: WG2

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Laboratory/Company: Department of Energy Systems Engineering. Faculty of Engineering, Necmettin Erbakan University, NEU Koycegiz Campus, 42090 Konya, Turkey

Laboratory/Company info (limited to 400 characters):

Necmettin Erbakan University is a public university, which has 20 faculties (medicine to social sciences to engineering), 8 vocational schools, 28 research centers, 4 institutes. Currently, we are maintaining our university's education life in a qualified way with our 35,171 students with 1,909 teaching staff and 1,149 administrative personnel.

Link to the home page of the Laboratory/Company: <https://www.erbakan.edu.tr/bitam>

Fields of expertise (limited to 400 characters): <https://www.erbakan.edu.tr/>

The research interests:

- Lignocellulosic biomass upgrading, valuable bio-derived molecules (such as HMF, FDCA, GVL, Levulinic Acid...etc.),
- Heterogeneous catalysis,
- Biofuels, biopolymers & applications,
- bio-photovoltaics, marine mucilage and circular economy,
- IP rights, technology intelligence, tech transfer and commercialization.

5 Main publications or patents:

A. Ponrouch, R. Dedryvère, D. Monti, **A. E. Demet**, J. M. Ateba Mba, L. Croguennec, C. Masquelier, P. Johansson, and M. R. Palacín, "Towards High Energy Density Sodium Ion Batteries Through Electrolyte Optimization" *Energy & Environmental Science*, 6, 2361-2369, June 2013.

A. E. Demet, N. Tanchoux, G. Centi, R. De Luca, S. Perathoner, F. Di Renzo, and W. Vermeiren, "On the R&D Evolution in Catalytic Upgrading of Biomass" Elsevier, *Horizons in Sustainable Industrial Chemistry and Catalysis*, Volume 178, ISBN: 9780444641274, February 2019. (doi.org/10.1016/B978-0-444-64127-4.00008-2)

A. E. Demet, and H. B. Yildiz, "Patent Literature Study For Renewable Energy Resources" *International Entrepreneurship and Innovation Research Congress (UGIAK)*, NEUPRESS, ESNB : 978-625-7517-73-7, December, 2021.



- A. E. Demet**, O. Gimello, R. Arletti, N. Tanchoux, F. Quignard, G. Centi, S. Perathoner, and F. Di Renzo, "HMF oxidation to FDCA on mixed oxide catalysts", *Journal of Catalysis*, (Recently submitted)
- A. E. Demet**, M. Guler, S. N. Oz, and H. B. Yildiz, "Design of a Novel Green Algae Based Biological Photovoltaic Cell Generating High Amount of Photocurrent via Photosynthesis: Biosensing Approach for Pesticide Analysis in Water", *Industrial & Engineering Chemistry Research* (Recently submitted)

Collaborations:

- Bilkent University (Turkey)
- KTO Karatay University (Turkey)
- Mersin University (Turkey)
- Institut Charles Gerhardt Montpellier (France)
- CNRS (France)
- University of Messina (Italy)
- University of Bologna (Italy)
- Total Energies (Belgium)
- Novi Sad Technology Faculty (Serbia)
- National University of Uzbekistan (Uzbekistan)
- Turkish Patent and Trademark Office (TURKPATENT)
- European Patent Office (EPO)
- World Intellectual Property Organization (WIPO)

Facilities:

- **General Analysis Instruments** (FT-IR, ICP-MS, OES, UV-Vis-NIR, XRD, XRF)
- **Surface and Dimensional Characterization Instruments** (BET Surface Area and Pore Size Analyzer, Mercury Porosimeter, Helium Pycnometer, Zeta Potential Analyzer, Optical Tensiometer)
- **Imaging Instruments** (AFM, FE-SEM, SEM, Confocal Raman Microscope, Optical Profilometer)
- **Mechanical Test Instruments** (Vickers-Brinell Hardness Tester, Rockwell Hardness Tester, Fatigue Test, Compact Inverted Metallurgical Microscope)
- **Chromatographic Instruments** (GC, GC-MS/MS, LC-MS/MS, UHPLC)
- **Others** (3D Design and Prototype Instruments, Biotechnology Instruments, Sample Preparation Instruments)