# Research Bulletin

STRONG PROBIOTICS ISOLATED FROM TRADITIONAL TURKISH FERMENTED FOODS

The health effects of probiotic bacteria obtained from traditional Turkish fermented foods were investigated. In the study, 66 different bacterial strains were isolated from foods such as boza, pickles, and tarhana. Among these, 25 strains were further examined, and 10 strains were identified as highly resistant to acid and bile salts. Additionally, these bacteria were found to have the potential to adhere to the gut and protect against harmful bacteria.
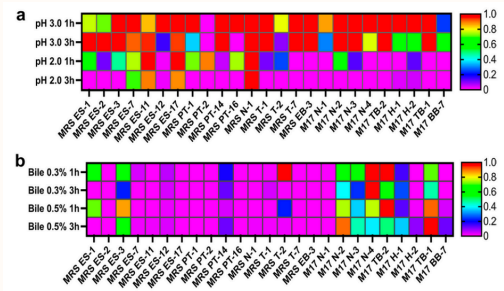

Fig. 1 Heatmap analysis of isolates in acid (pH 2.0 and pH 3.0) (**a**), and bile salt (0.3% and 0.5%) (**b**). All viabilities were normalized according to maximum and minimum values for each condition individually. Viabilities over 100% accepted as 100%

Yigit, M. B. and Cebeci, A. (2025). Highly potent new probiotic strains from traditional turkish fermented foods. Current Microbiology, 82(2). https://doi.org/10.1007/s00284-024-04045-5

SCANNING TIME SIGNIFICANTLY REDUCED IN MRI WITH A NEW METHOD
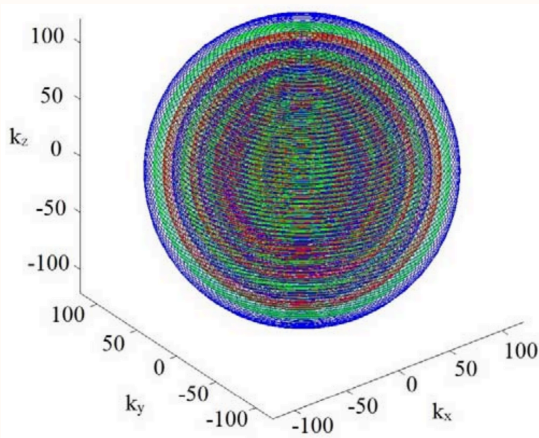
**Şekil 5.** Tasarlanan 32 adetten oluşan iç içe kabuk (Designed 32 concentric shells)

A 3D k-space sampling method using non-Cartesian trajectories has been developed to reduce Magnetic Resonance (MR) imaging time. In the study, 32 nested shells with different radii were used to accelerate the data acquisition process. Simulations showed that with this method, k-space could be filled in less than one second. Considering that traditional methods take 3-4 minutes, the new approach significantly reduces imaging time.

Dündar, M. S. and Yılmaz, B. (2025). Mr görüntülemede kartezyen olmayan yörüngelerle k-uzayının 3 boyutlu örneklenmesi. Gazi Üniversitesi Mühendislik Mimarlık Fakültesi Dergisi, 40(2), 1039-1048. https://doi.org/10.17341/gazimmfd.1339778

POST-PANDEMIC SHIFT IN VACATION PREFERENCES: URBAN TO RURAL TRAVEL TRENDS

The impact of the COVID-19 pandemic on travel from urban to rural areas was examined. The study found that urban residents increasingly preferred rural areas for vacations and leisure activities. Analyses based on anonymized mobile phone data revealed that travel from cities to rural areas increased during the pandemic. However, this trend also deepened socioeconomic inequalities, as higher-income groups had greater access to rural destinations.
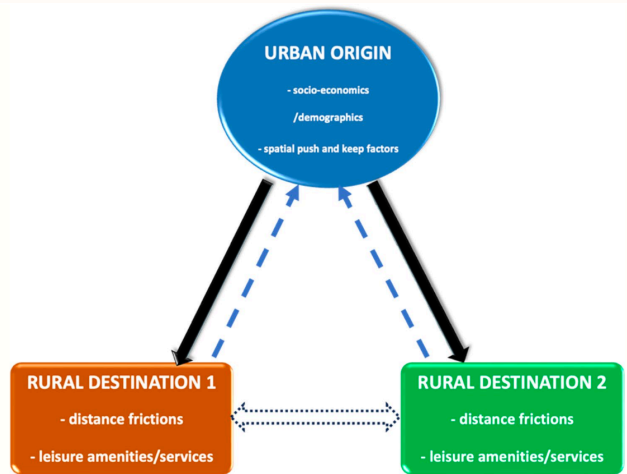
Türk, U., Toger, M., Östh, J., Kourtit, K., & Nijkamp, P. (2025). Rural feet voting of leisure explorers. International Journal of Tourism Research, 27(1). https://doi.org/10.1002/jtr.70003

DO FOREIGN INVESTMENTS PROTECT THE ENVIRONMENT? A STUDY ON CHINA

The environmental impact of Foreign Direct Investments (FDI) in China and the role of Environmental Regulations (ER) in shaping these effects were examined. The study found that FDI reduces carbon emissions and ecological footprint, but environmental regulations do not directly enhance this effect. While FDI encourages advanced technology and eco-friendly production processes, existing regulations were found to be insufficient in promoting environmental sustainability.

Table 3
Results of panel cointegration tests.

|	(1)	(2)	(3)	(4)
Pedroni (1999) cointegration tests				
Panel V-statistic	3.952***	1.852**	1.249	1.405*
Panel Rho-Statistic	−2.207***	−0.404	1.312	0.395
Panel PP-Statistic	−4.580***	−4.5***	−3.47***	−4.87***
Panel ADF-Statistic	−9.197***	−4.6***	−3.79***	−5.07***
Group Rho-Statistic	2.024	3.917	3.825	4.650
Group PP-Statistic	−2.895***	−2.16**	−3.23***	−1.297*
Group ADF-Statistic	−4.137***	−2.32**	−5.38***	−3.33***
Kao (1999) cointegration test				
ADF	3.002***	3.126**	2.865***	3.027***
Westerlund (2007) cointegration tests				
Group-τ	−2.052	−2.001	−6.211**	−1.446
Group-α	−7.167	−0.673	−0.423	−4.008
Panel-τ	−13.536	−2.924	−0.024	−2.204
Panel-α	−10.675*	−1.049	−0.005	−2.426*

Notes: *, **, and *** indicate significant at 10%, 5%, and 1% levels.

Ehigiamusoe, K. U., Chen, D., Doğan, E., & Binsaeed, R. H. (2025). Unravelling the moderating roles of environmental regulations on the impact of foreign direct investment on environmental sustainability. Journal of Environmental Management, 375, 124175. https://doi.org/10.1016/j.jenvman.2025.124175

THE IMPACT OF UNBOXING VIDEO VIEWING MOTIVATIONS ON EWOM AND PURCHASE INTENT

This study examines the impact of unboxing video viewing motivations on consumers' electronic word-of-mouth (eWOM) and purchase intent, along with the mediating role of advertising interest, within the framework of Uses and Gratifications Theory (UGT) and the Elaboration Likelihood Model (ELM).
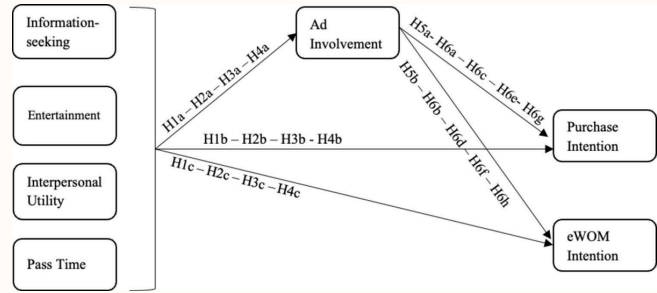

Analyzing data from 499 YouTube users, the study found that information-seeking, entertainment, and interpersonal benefit motivations positively influence eWOM and purchase intent, whereas time-passing motivation had no significant effect. By proposing a new UGT-ELM-based model, the study provides new insights into consumer behavior and offers valuable implications for marketing analytics.

Özer, S., & Uğurhan, Y. Z. C. (2025). The impact of consumers' motives for watching unboxing videos on eWOM and purchase intentions: the mediating role of ad involvement. Journal of Marketing Analytics, 1-24.


TARHANA MADE HEALTHIER
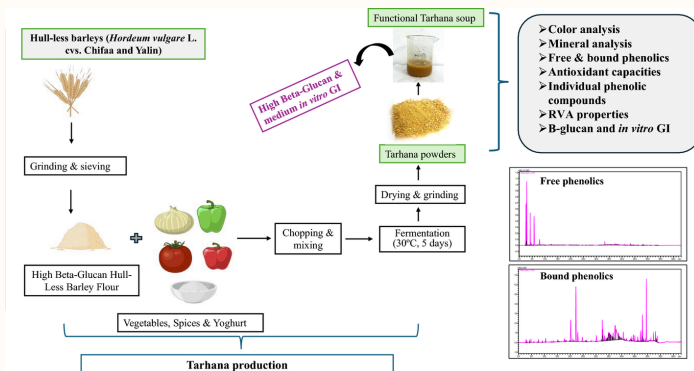
A study examined the effects of barley flour with high β-glucan content on tarhana. The findings revealed that tarhana made with Chifaa barley flour is richer in potassium, magnesium, and calcium while having a lower glycemic index. Additionally, this version of tarhana exhibited higher antioxidant activity, making it a healthier alternative.

Koksel, H., Ozkan, K., Tekin-Cakmak, Z. H., Karasu, S., Kahraman, K., Oruc, S., ... & Sestili, F. (2024). A functional barley-based fermented soup (tarhana) with high β-glucan content. European Food Research and Technology, 1-12.

# NEXT-GENERATION MATERIAL: THE FUTURE OF AMORPHOUS SI$_2$BN EXPLORED!
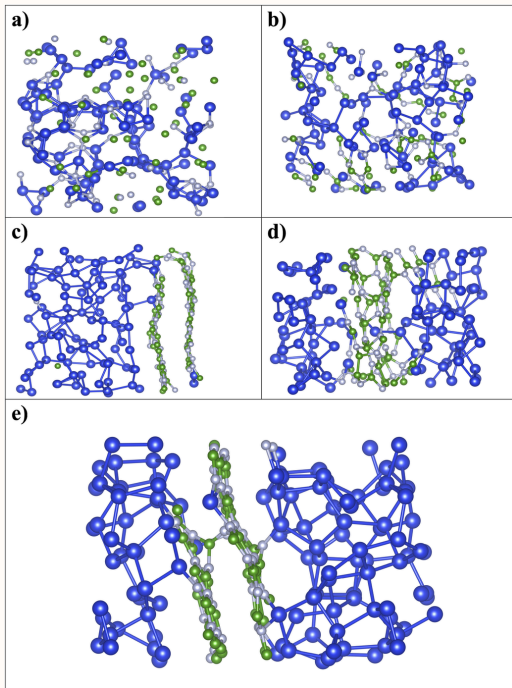
A computer-aided study investigated the atomic structure, electrical, and mechanical properties of amorphous silicon boron nitride (a-Si$_2$BN). Simulations revealed a phase-separated structure composed of Si-rich and BN-rich regions. The material was found to exhibit semiconducting properties while offering a balance between hardness and flexibility. It has been highlighted as a promising candidate for high-temperature semiconductors and flexible electronics.

Durandurdu, M. (2025). Phase-separated amorphous Si2BN: A computational study. Journal of Applied Physics, 137(6).

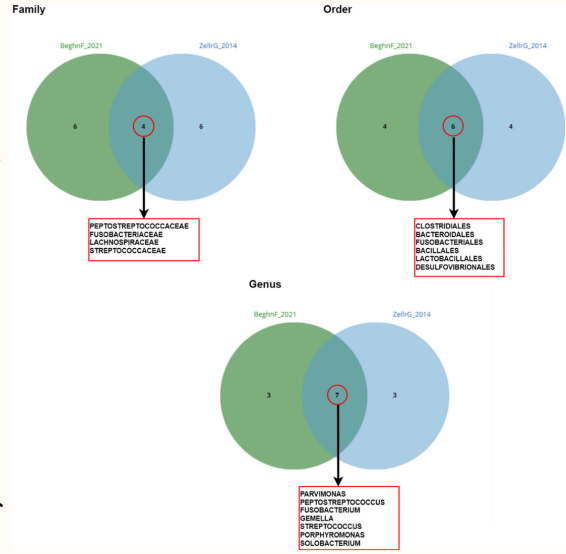# ENHANCED OIL RECOVERY IN MEMBRANES WITH SIO$_2$ NANOPARTICLES

This study investigated the oil separation performance of polyvinylidene fluoride (PVDF) and polysulfone (PSF) membranes modified with SiO$_2$ nanoparticles. The results showed that PVDF/SiO$_2$ (94.1%) and PSF/SiO$_2$ (92.2%) membranes achieved high oil rejection rates. This technique enables over 90% oil recovery, presenting a significant step toward environmental protection and sustainable development.
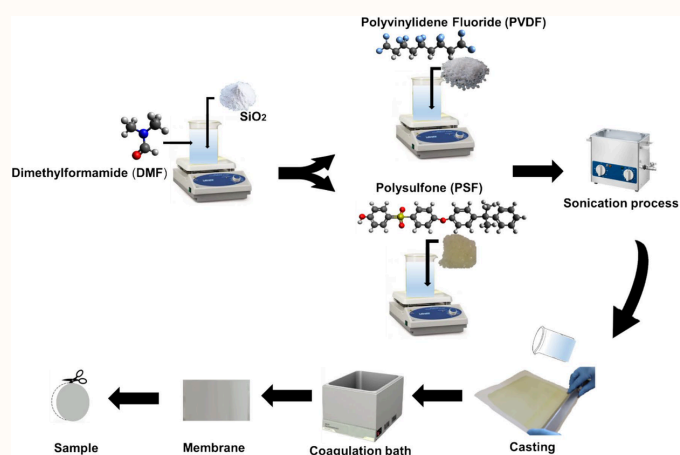
Senol-Arslan, D., & Gul, A. (2025). Enhancing Oil Rejection in PVDF and PSF membranes: The Role of SiO2 NPs. Journal of Applied Polymer Science, 142(11), e56590.

TAXONOMIC-LEVEL MICROBIOME ANALYSIS AND BIOMARKER DISCOVERY FOR COLORECTAL CANCER PREDICTION

This study highlights the significance of the gut microbiota in Colorectal Cancer (CRC) diagnosis and utilizes the Grouping-Scoring-Modeling (G-S-M) method for taxonomic-level biomarker discovery. Using metagenomic data, classification was performed at three taxonomic levels (genus, family, order), with the highest accuracy achieved at the genus level (AUC = 0.90). *Fusobacterium*, *Parvimonas*, and *Peptostreptococcus* were identified as common biomarkers in both datasets. The integration of machine learning and biological knowledge contributes to the identification of more reliable and early-stage CRC biomarkers, enhancing diagnostic potential.