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| Project Title: INVESTIGATION OF THE EFFECT OF SOME ELECTRON TRANSPORT SYSTEMS ON THE OXIDATION OF NADH AND NADPH COENZYMES SYSTEM OPTIMISATION FOR IN SITU CONVERSION |
| Start Date: | 09/1993 |
| End Date: | 09/1995 |
| Project Supporter: | EÜ-BAP |
| Team: | Researcher: Prof. Dr. Şenol ALPAT |
| Project Description: | Determination and optimisation of suitable oxidation systems for the reuse of NADH and NADPH. |
| Project Budget: | 1750TL |

**COMPLETED PROJECTS**

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| Project Title: DEVELOPMENT OF A NEW METHOD FOR THE REGENERATION OF SOME INDUSTRIALLY IMPORTANT COSENZYMES |
| Start Date: | 09/1994 |
| End Date: | 09/1996 |
| Project Supporter: | DEÜ-BAP |
| Team: | Researcher: Prof. Dr. Şenol ALPAT |
| Project Description: | Investigation of the regeneration of coenzymes such as NADH for economic utilisation. |
| Project Budget: | 1750TL |

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| Project Title: ENVIRONMENTAL PROTECTION APPLICATIONS OF NATURAL AND MODIFIED FORMS OF WESTERN ANATOLIAN ZEOLITE |
| Start Date: | 10/2000 |
| End Date: | 04/2002 |
| Project Supporter: | TÜBİTAK |
| Team: | Researcher: Prof. Dr. Şenol ALPAT |
| Project Description: | Development of adsorptive properties of zeolite and investigation of adsorption properties of heavy metals. |
| Project Budget: | 9000TL |

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| Project Title: EVALUATION OF CORTISOL LEVELS DURING GINGIVAL FORMATION IN DIFFERENT PERIONTAL DISEASE GROUPS |
| Start Date: | 09/2002 |
| End Date: | 09/2004 |
| Project Supporter: | EÜ-BAP |
| Team: | Researcher: Prof. Dr. Şenol ALPAT |
| Project Description: | Determination of cortisol levels in gum diseases by HPLC. |
| Project Budget: | 3000TL |

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| Project Title: PREPARATION OF ZEOLITE AND PERLITE MODIFIED CARBON PASTE ELECTRODE AND APPLICATION OF ION EXCHANGE VOLTAMMETRY FOR TRACE ELEMENT DETERMINATION |
| Start Date: | 09/2002 |
| End Date: | 09/2004 |
| Project Supporter: | DEÜ-BAP |
| Team: | Researcher: Prof. Dr. Şenol ALPAT |
| Project Description: | Development of electrochemical sensor for the determination of metals by utilising the adsorptive properties of zeolite. |
| Project Budget: | 6000TL |

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| Project Title: DEVELOPMENT AND CHARACTERISATION OF A BIOSENSOR FOR THE DETERMINATION OF BIOGENAMINES |
| Start Date: | 03/2004 |
| End Date: | 05/2006 |
| Project Supporter: | DEÜ-BAP |
| Team: | Researcher: Prof. Dr. Şenol ALPAT |
| Project Description: | An electrochemical sensor for the determination of dopamine, an important transmitter, has been developed. |
| Project Budget: | 6000TL |

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| Project Title: INVESTIGATION OF THE ELECTROCHEMICAL BEHAVIOUR OF NADH WITH TOLUIDINE BLUE O (TBO) MODIFIED ELECTRODE |
| Start Date: | 09/2011 |
| End Date: | 06/2013 |
| Project Supporter: | DEÜ-BAP |
| Team: | Researcher: Prof. Dr. Şenol ALPAT |
| Project Description: | Investigation of the electrochemical behaviour of NADH cosenzyme with mediator. |
| Project Budget: | 49900TL |

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| Project Title: COLLABORATIVE CHEMISTRY LEARNING SUPPORTED BY INFORMATION COMMUNICATION TECHNOLOGY IN A CONSTRUCTIVIST LEARNING ENVIRONMENT |
| Start Date: | 06/2011 |
| End Date: | 06/2013 |
| Project Supporter: | DEÜ-BAP |
| Team: | Researcher: Prof. Dr. Şenol ALPAT |
| Project Description: | The effect of information communication technologies on students' academic achievement and motivation in the subject of liquids was examined. |
| Project Budget: | 20200TL |

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| Project Title: THE ELIMINATION OF BIOLOGICALLY ACTIVE PEPTIDES FROM THRACHINUS DRACO BY ENZYMATIC HYDROLYSIS AND EVALUATION OF THEIR POSSIBLE BIOLOGICAL ACTIVITIES |
| Start Date: | 03/2016 |
| End Date: | 03/2017 |
| Project Supporter: | TÜBİTAK |
| Team: | Researcher: Prof. Dr. Şenol ALPAT |
| Project Description: | Obtaining bioactive peptides from trachony, a non-economic fish species found in our seas, and elucidation of peptide analyses. |
| Project Budget: | 30000TL |

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| Project Title: THE INVESTIGATION OF PRE-SERVICE CHEMISTRY TEACHERS' WRITTEN ARGUMENTS IN ORGANIC STRUCTURE DETERMINATİON COURSE IN TERMS OF QUALITY OF ARGUMENT AND LEARNING DIFFICULTY |
| Start Date: | 01/2020 |
| End Date: | 01/2021 |
| Project Supporter: | DEÜ-BAP |
| Team: | Project Coordinator: Prof. Dr. Gülten ŞENDUR |
| Project Description: | Within the scope of the project, Chemistry Teacher Candidates' Written Arguments in Organic Structure Determination Course were analysed in terms of Argument Quality and Learning Difficulty. |
| Project Budget: | 29000TL |

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| Project Title: THE EFFECT OF CASE-BASED LEARNING INSTRUCTION OF CHEMICAL REACTION RATE ON STUDENTS CONCEPTUAL UNDERSTANDING |
| Start Date: | 06/2012 |
| End Date: | 06/2014 |
| Project Supporter: | DEÜ-BAP |
| Team: | Project Coordinator: Prof. Dr. Gülten ŞENDUR |
| Project Description: | Within the scope of the project, the effect of case-based teaching of the rate in chemical reactions on students' conceptual perceptions was analysed. |
| Project Budget: | 5000TL |

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| Project Title: THE RELATIONSHIP OF PROSPECTIVE TEACHERS' SCIENCE LITERACY WİTH VARIOUS VARIABLES: A STRUCTURAL EQUATION MODEL PROPOSAL |
| Start Date: | 04/2021 |
| End Date: | 09/2022 |
| Project Supporter: | DEÜ-BAP |
| Team: | Project Coordinator: Prof. Dr. Nalan AKKUZU GÜVEN  |
| Project Description: | The Relationship of Prospective Teachers' Science Literacy with Various Variables: A Structural Equation Model Proposal. |
| Project Budget: | 21000TL |

**ONGOING PROJECTS**

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| Project Title: ORGANIC DYESTUFFS TREATMENT COLUMN DESIGN STEM MODULE |
| Start Date: | 04/2025 |
| End Date: | Continues |
| Project Supporter: | TÜBİTAK-2209A |
| Team: | Counsellor: Prof. Dr. Şenol ALPAT |
| Project Description: | Adsorption of organic dyestuffs and optimisation of adsorption parameters and design of the treatment column according to these parameters. |
| Project Budget: | 9000TL |

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| Project Title: DEVELOPMENT OF A BIOSENSOR FOR THE DETERMINATION OF PLANT-DERIVED TYROSINASE INHIBITORS |
| Start Date: | 10/2024 |
| End Date: | Continues |
| Project Supporter: | DEÜ-BAP |
| Team: | Counsellor: Prof. Dr. Şenol ALPAT |
| Project Description: | Development and optimisation of biosensors for the determination of important tyrosinase inhibitors of cosmetic value. |
| Project Budget: | 78252TL |

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| Project Title: INVESTIGATION OF CHEMISTRY TEACHER CANDIDATES' TECHNOLOGY SUPPORTED THREE DIMENSIONAL MOLECULE MODELLING IN THE CONTEXT OF THEIR CONCEPTUAL UNDERSTANDING AND SPATIAL ABILITIES: A MIXED METHOD RESEARCH |
| Start Date: | 01/2024 |
| End Date: | Continues |
| Project Supporter: | DEÜ-BAP |
| Team: | Project Coordinator: Prof. Dr. Melis Arzu UYULGAN |
| Project Description: | Investigation of Pre-service Chemistry Teachers' Technology-Supported Three-Dimensional Molecule Modelling in the Context of Their Conceptual Understanding and Spatial Abilities: A Mixed Method Research |
| Project Budget: | 33000TL |

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| Project Title: INVESTIGATION OF CHEMISTRY PRE-SERVICE TEACHERS’ GREEN CHEMISTRY AND STEM AWARENESS WITHIN THE SCOPE OF STEM-BASED LABORATORY ACTIVITIES |
| Start Date: | 05/2024 |
| End Date: | Continues |
| Project Supporter: | DEÜ-BAP |
| Team: | Project Coordinator: Prof. Dr. Nalan AKKUZU GÜVEN |
| Project Description: | Investigation of Chemistry Pre-service Teachers’ Green Chemistry and STEM Awareness within the Scope of STEM-Based Laboratory Activities |
| Project Budget: | 14000 TL |

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| Project Title: THE EFFECT OF ARGUMENTATION-BASED STEM ACTIVITIES ON STUDENTS' ENTREPRENEURIAL PERCEPTION, PROBLEM-SOLVING SKILLS AND ARGUMENTATION QUALITY |
| Start Date: | 01/2025 |
| End Date: | Continues |
| Project Supporter: | DEÜ-BAP  |
| Team: | Project Coordinator: Prof. Dr. Aybüke PABUÇCU AKIŞ |
| Project Description: | Examining the effect of argumentation based integrated stem applications on students' entrepreneurship perception, problem solving skills and argumentation quality. |
| Project Budget: | 39000TL |

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| Project Title: EFFECT OF STEM ACTIVITIES ON HIGH SCHOOL STUDENTS' PROBLEM-SOLVING SKILLS AND SUSTAINABILITY PERCEPTIONS |
| Start Date: | Year 2024-2025 1st Semester |
| End Date: | Continues |
| Project Supporter: | TUBITAK 2209-A |
| Team: | Project Coordinator: Prof. Dr. Aybüke PABUÇCU AKIŞ |
| Project Description: | Examining the effect of STEM activities on high school students' problem-solving skills and sustainability perceptions |
| Project Budget: | 9000 TL |

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| Project Title: EFFECTS OF ARDUINO-BASED STEM APPLICATIONS ON PROBLEM-SOLVING SKILLS: EDIBLE FILMS |
| Start Date: | Year 2024-2025 1st Semester |
| End Date: | Continues |
| Project Supporter: | TUBITAK 2209-A |
| Team: | Project Coordinator: Prof. Dr. Aybüke PABUÇCU AKIŞ |
| Project Description: | Investigating the effects of Arduino-based STEM applications on students’ problem-solving skills. |
| Project Budget: | 9000 TL |