**PROJECT INFO SHEET**

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| **PROJECT STAFF INFO** |

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| **Name-Surname/Title** | Serdal Kaya, Assist. Prof. |
| **Department** | Aeronautical Engineering |
| **Role in the Project** | Principal Investigator |

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| **PROJENİN ADI** |

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| **Partners/Participants/**  **Stakeholders** | Necmettin Erbakan University |
| **Research Topic** | Development of A New Cyanide Ion Chemosensor Based on Meso-Formyl-BODIPY Dye |
| **Impacts of the Projects** | Research Paper |
| **Keywords** | Cyanide ion sensor, BODIPY, fluorescent sensor dyes, chemosensors |
| **Start-End Date** | 07.02.2020 – 07.08.2021 |
| **Project Budget** | 180.000 TL |

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| **Summary** |  |
| Cyanide ion (CN- ion) is one of the most harmful inorganic pollutants wasted by various industrial processes. Although some spectroscopic methods are being used, these methods need advanced instrumentation and have high detection limits. Because of this, rapid, low-cost and sensitive methods are highly required to detect CN- ion. Chemosensor application is one of the most useful methods for selective detection of the target analyte. BODIPY (boradiazaindacene) dyes are one of the promising candidates for these types of applications because of the unique optical and photophysical properties. Here, we report the first application of the meso-formyl-BODIPY dye-based, rapid and naked-eye CN- ion sensor application depending on the reaction of CN- ion and aldehyde functionality of the meso-formylated BODIPY derivative (BODIPY-BAL). Absorption and emission experiments were successfully conducted. Additionally, colorimetric tests were performed in solution and on test strips. The limit of detection of the chemosensor was calculated as 10.4 µM. Real sample experiments in seawater were also performed and CN- ion was detected at 50 µM concentration, which is the limit level of CN- ion concentration causes acute effects determined by the U.S. Environmental Protection Agency (EPA). | |
| **Expected and/or Achieved Results** |  |
| Research paper has been published. | |