PROF. DR. AYFER KALKAN BURAT
TETRAPYROLE-BASED TARGET MATERIALS

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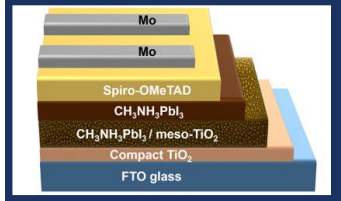
SYNTHESIS AND CHARACTERIZATION OF TETRAPYRROLE-BASED MACROCYCLIC COMPOUNDS FOR USE IN DIFFERENT TECHNOLOGICAL AREAS SUCH AS HOLE TRANSFER LAYER AND/OR BIOLOGICAL APPLICATIONS IN SOLAR CELLS.

PROJECTS

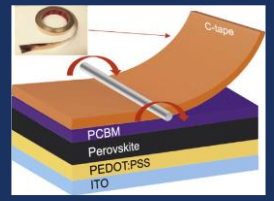
- ✓ **TUBİTAK-1001** NOVEL FLUORENYL SUBSTITUTED PHTHALOCYANINES FOR PHOTODYNAMIC ANTIMICROBIAL ACTIVITY, BIOFILM INHIBITION, AND DNA INTERACTION
- ✓ TOGETHER WITH THE ITU ENERGY INSTITUTE TEAM, WE APPLIED FOR A BILATERAL COOPERATION PROJECT WITH KOREA AND BULGARIA ON SOLAR CELLS.

Designing Hole Tranfer Materials

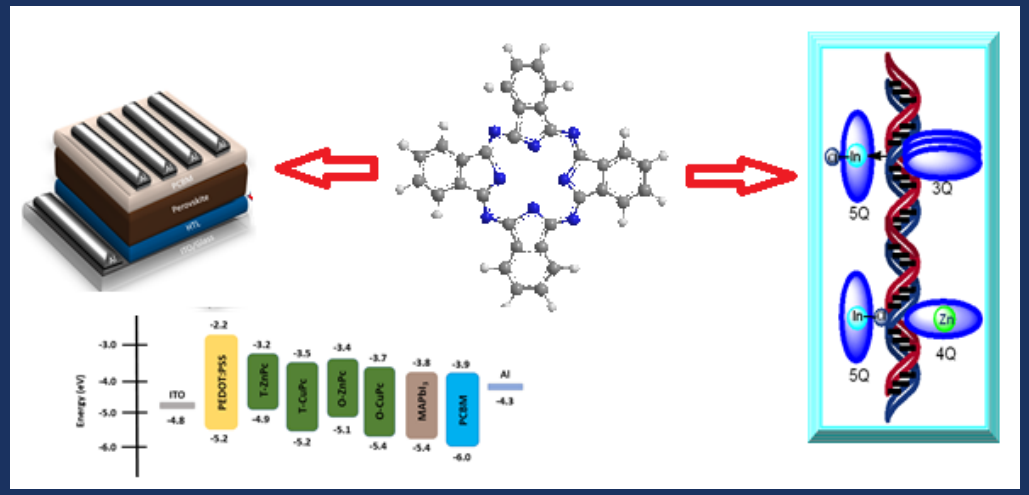
- ✓ We are designing HTM for perovskite solar cells, one of the remarkable structures of photovoltaic solar cells.



n-i-p



p-i-n type

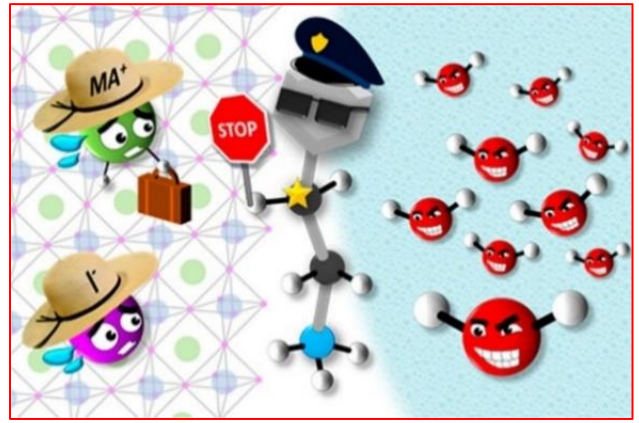


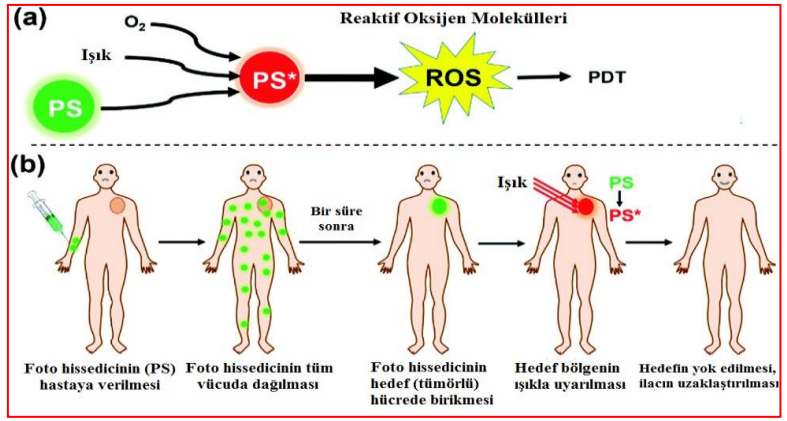
Potential Drug Synthesis for Photodynamic Therapy

- ✓ Synthesis of target phthalocyanine structures,

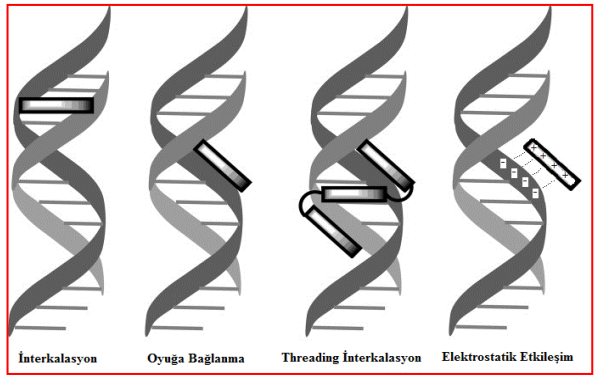
examination of photophysical and photochemical properties,
Investigation of interactions with DNA and antibacterial/antimicrobial properties.

Using commercially available cost-effective Zn(II) phthalocyanine as hole-transporting material for inverted type perovskite solar cells and investigation of dopant effect





Mechanism and application of photodynamic therapy



How phthalocyanine binds to DNA