

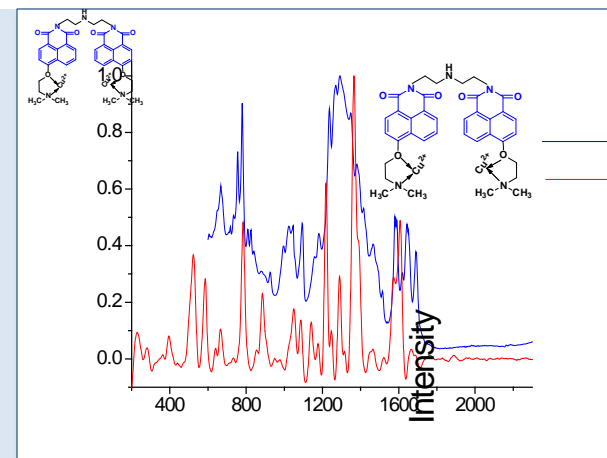
Project: Biological studies of some new 1,8-naphthalimides

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Period of STMS (9/07/2012-18/07/2012):

Host institution: Hacettepe University,
 Engineering Faculty, Food Engineering Department
 Ankara, Turkey)

Mentor: İsmail Hakkı Boyacı, e-mail: ibb@hacettepe.edu.tr



Aims & subject of work: Spectral characterisation of novel fluorescent compounds with sensor and microbiological properties.

Argumentation of necessity of STSM : The substances synthesized by us at the Medical Faculty of the University of Sofia were tested at the laboratories of the Department of Food Engineering, Hacettepe University to establish their potential antifungal and antibacterial properties. The combination of the efforts of both research teams result in developing new bioactive compounds.

Workplan/timeschedule followed:

- Discussion on the cooperation between our scientific group and the laboratory team of Prof. Boyacı for design, synthesis and biological investigations of new fluorescent proteins.
- Exploration of the possibilities to use some new 1,8-naphthalimide compounds such as biosensors for rapid detection of pathogens in food.
- Preliminary test on the biological activity of some new 1,8-naphthalimides of on various pathogens.

Main results and outcome :

During our meetings with Prof. Boyacı we discussed the joint research on the synthesis of novel functional dendrimers with improved properties, which can detect biological important compounds. Particular attention has been paid to the DNA and protein investigations. Sensor molecules based on the structural modification on 1-8-naphthalimide have been designed. Also I have had the opportunity to meet other members of the academic staff of the Department of Food Engineering, Hacettepe University and from other Universities in Ankara doing similar research and to discuss further cooperation. During my visit at the laboratory some dendrimer complexes have been investigated by Raman spectroscopy and the results have been published.

1. H.T. Temiz, I.H. Boyacı, I. Grabchev, U. Tamer, Surface enhanced Raman spectroscopy as a new spectral technique for quantitative detection of metal ions, *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 116 (2013) 339-347

2. I. Grabchev, I. H. Boyacı, U. Tamer, I. Petkov, Zn (II) and Cu (II) halide complexes of poly(propylene amine) dendrimers analysed by Infrared