Division of Material Chemistry	Research field	Function Development Chemistry	Lab. ID MC15
Laboratory web site	http://kohka.ch.t.kanazawa-u.ac.jp/lab2/lab2.html		

Research subjects

Modified electrode maintains the function of the catalysis, the selective reactivity, transducer and the sensor, and the development is expected of wide learning field and application field. But when not understanding ″electron transfer process″ and ″molecular recognition system″ in electrode interface and that neighborhood theoretically/experimentally, development of a new modified electrode can't be expected. Therefore a peculiar reaction on modified electrode is considered from the angle of the charge-transfer mechanism and the intermolecular interaction using an electrochemical method, I'm aiming at design and development of a new functionalized molecule modified electrode which can control specific chemical reaction.

Master/Doctor course: Education policy, curriculum, typical activity in the laboratory

Master course: After arranging with me about a policy of a study, I'm being led to make a plan by yourself and be advancing your study. Further, to advance your study by yourself, a background of the study is learned through a workshop (once a month), a study meeting (once a month) and a journal meeting (3 times a year).
To foreign students: The conversation at this laboratory is Japanese, so I wish that you're able to understand Japanese a little.

Daily life in the laboratory, etc.

When you can defend safety and health protection as a chemist and promise of a group activity, I think a free study life can be spent. If you're interested, I'd hope that you ask a student in this laboratory the state of the laboratory.

Message or comments by the laboratory faculty staffs

Though we're living a comfortable life by electrochemistry, I don't know the true form of the electrode reaction well. At present, we're working on a study of the oxygen reducing catalyst which connects to fuel cell development and a study of new electroconductive polymer aiming at a power strage device, but It'll be a research task to make the factor of a function expression clear by taking notice of a reaction path in the peculiar reaction field and use convenience for a electrode reaction. Let's go to look for the truth of the electrode reaction that is not yet elucidated.

Recent Master theses in these 3 years (+ more if appropriate)

year.month	Thesis title (including English translation of Japanese thesis title)
2017.3	Influence on oxygen reduction reaction by both the heat-treatment and ion bridging to the water-soluble iron porphyrin
2017.3	Electrochemical properties of electropolymerized 3-silylthiophene having phenyl groups as both p- and n-doping polymer
2017.3	Development of the method for manufacturing ORR active-iron porphyrin supported carbon black catalyst
2016.3	Electrochemical properties of the poly(3-bisperfluoroalkylmethylsilylthiophenes) obtained by electropolymerisation
2016.3	Consideration of the function expression factor as the electrocatalyst for oxygen reduction of the heat-treated FeTPPS
2016.3	Improvement effect of the oxygen reduction ability by the heat-treated iron porphyrin (FeTCPP) cross-linked with barium ion
2015.3	Consideration of oxygen reduction reaction mechanism on the heat-treated Ba2+-FeTPPS4 electrode catalyst
2015.3	Influence on oxygen reduction reaction of the electrodeposition condition for cobalt pyrrole composite catalyst modification
2014.3	Advantage as oxygen eduction reaction catalyst of the heat-treated Ba2+-FeTPPS4 compared with CoTPPS4
2014.3	Influence to the ability of oxygen reduction reaction on the modified pyrrole film by electrodeposition condition of the pyrrole aqueous solution including cobalt salts
2014.3	Electrochemical properties of electropolymerized 3-silylthiophene having fluoroalkyl chain as conductive polymer

Recent Doctoral theses in these 3 years (+ more if appropriate)

year.month	Thesis title (including English translation of Japanese thesis title)

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