

Wigen Nazarov

FY2014 JSPS Invitation Fellowship Program for Research in Japan  
(short term)

ID No. S-14051

This report is by Wigen Nazarov, the awarded JSPS fellow during the visit to Tokyo Institute of Technology at Suzukakedai campus under application made by Professor Keiji Nagai to conduct a programme of research of mutual interest during the period of 16<sup>th</sup> March to 16<sup>th</sup> April 2015.



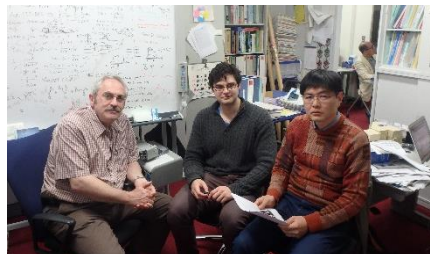
## First and second Week

The first week was introduction and familiarisation of staff and students at the chemical resources laboratory at Suzukakedai campus. During this week Wigen Nazarov has spent some time to familiarise himself with the research that is currently carried out at the chemical resources laboratory, and research interests of professor Iyoda and professor Nagai.

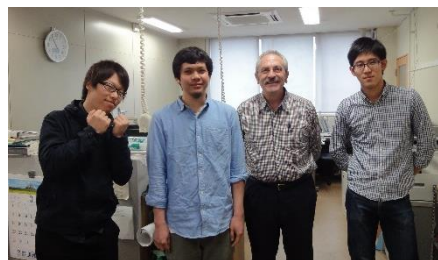
During this week, a number of one to one discussions with research students and staff on current research of mutual interest were carried out, and some visits to the laboratories and capabilities of the laboratories was also attempted.

During this week there was also a mini-symposium with guest speakers, students, researchers and speakers from chemical resources laboratory (Professor T. Iyoda), ILE and Utsunomiya University attended and presented. Wigen Nazarov presented a talk about the current research trends in Europe and UK in porous polymeric materials for high energy lasers. This resulted in interesting discussions after the presentations. The presentation from the Utsunomiya University was about EUV Sn targets and possibility of other elements for the production of near soft X-rays. Professor K. Nagai has an interest in this field and there are interesting mutual materials that could benefit the production of targets for use on laser for the production of EUV.

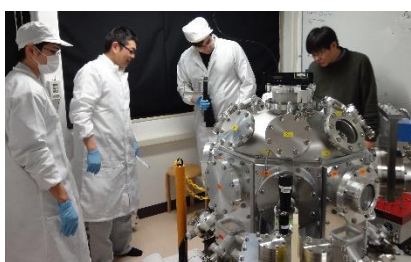
During this first week the Iyoda/Nagai group at the laboratory were involved in the commissioning of the new laser and the target chamber for EUV production.



*From left: Dr Nazarov (St Andrews University), Dr Musgrave (Tokyo Tech. Institute), Professor Nagai (Tokyo Tech. Institute)*



*Students at Tokyo Tech. Institute During lab visit.*



*Commissioning of the new laser and target chamber for the EUV production.  
Professor Nagai – First right.*

Visiting ILE at Osaka university meeting Professor Norimatsu, professors Tanaka and Habara, discussing the current issues regarding the low density materials used for fusion energy research. Some of the future challenges and possible solutions to these problems were also scrutinised. Wigen Nazarov had already collaborated with members of ILE on laser targets therefore some future experiments were discussed with professors Habara and Tanaka.

During an industrial visit to Toyota Company, presenting a talk to members of Dr Komeda's team were introduced and after the presentation, Dr Komeda presented an outline of the company and its research into the future materials. Toyota has a strong interest in high energy lasers and some interest were expressed in low density materials. It was a productive meeting and very informative.



*From Left, Dr O. Komeda, Professor K.Nagai, Dr W. Nazarov, Dr C. Musgrave.*

### Third week

A meeting on 30<sup>th</sup> March was set up at the Ookoyama campus of Tokyo Institute of Technology, to explore the possibility of student exchange between professor Iyoda and Nagai group and university of St Andrews High Energy Laser materials Laboratory. Present in the meeting were Professor Shigekazu Ito Director of science, Dr Hidetoshi Sekiguchi Vice president for international affairs, Professor Mikami, Professor Iyoda, Professor Nagai and Dr Nazarov.

It was agreed in principle such a student exchange will be very beneficial to either side, but it was decided to postpone the official negotiations until next fiscal year as the institute is undergoing a major reorganisation and the matter will be taken up again next year.

### Final week

Final week was wrapping up and planning future collaboration between St Andrews and chemical resources laboratory at Tokyo Technical Institute. From the discussions both with staff and young researchers during the four weeks in Japan, many new ideas and collaborations on many projects in Japan has been identified.

### Summary

It has been very productive and useful visit to Tokyo Institute of Technology and specifically chemical resources laboratory under JSPS scheme, not only the exchange of knowledge but also meeting people and making contact with people face to face. The future development from this meeting will be very fruitful in the future.

The author of this report, Wigen Nazarov, JSPS visiting fellow, would like to thank Professors Iyoda and Nagai and in particular JSPS fellowship programme for making such a fruitful meeting possible.