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A short review of the use and status of the NRC EuroMaster diploma

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Authors:	Jon Petter Omtvedt (UiO), Jan John (CTU), Gareth Law (UH)	
For the Lead Beneficiary		
Jon Petter Omtvedt <i>Jon Petter Omtvedt</i>		

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Assoc. Prof Mojmír Němec

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EC Project Officer:	Kateřina Ptáčková
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Coordinator contact:	+420 224 358 331, mojmir.nemec@fjfi.cvut.cz
Administrative contact:	+420 245 008 599, cinch@evalion.cz
Online contacts:	http://www.cinch-project.eu/

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A Short Review of the Use and Status of the NRC EuroMaster Diploma

The idea of creating a diploma or certificate that states that the holder meet a minimum criteria of knowledge and training in nuclear and radiochemistry (NRC) was conceived in the first CINCH project (running from 2010 to 2013). The necessary knowledge and training were identified and a "minimum requirement" document was compiled. The format of the EuroMaster Diploma was much debated during the second CINCH project (2014-2017). In the end it was agreed that a "none bureaucratic" system where a teaching institution was evaluated with respect to course content and scope of MSc projects/supervision should be implemented. If found worthy, the institution would then be granted the right to issue the "NRC EuroMaster Diploma" to applicable students, which would guarantee that the Diploma owner had a minimum of NRC skills.

Parallel to the CINCH work, or perhaps as an offspring from it, a network for promoting teaching in NRC was formed in August 2016 at the NRC 9 conference in Helsinki, Finland. The objective and functions of the European NRC Network were defined as:

- to cooperate in NRC education and training in Europe
- to promote development of NRC education and training in Europe
- to represent NRC education and training community towards other organizations and society
- to promote and organize student and teacher exchange between partners
- to organize common courses in NRC

Professor Clemens Walther (Leibniz Univ. Hannover, Germany) was elected chair. The network's webpages are located at <https://nrc-network.org/>

This network was tasked with granting and handling the NRC EuroMaster Diploma. This is defined in §7 in the network statutes "Functions, Procedures, and Practices of the European Network on Nuclear and Radiochemistry Education and Training":

§7 A NRC EuroMaster Group is formed within the network by the universities that fulfil the requirements set in the "Minimum Requirements for the EuroMaster Degree in Nuclear and Radiochemistry", prepared by the EU project Cooperation in Education and Training in Europe (CINCH), and that were granted the right to award NRC EuroMaster label to their students. This right is granted by the Nuclear and Radiochemistry Division of the European Association for Chemical and Molecular Sciences (EuCheMS NRC Division). An application package for the NRC EuroMaster has been prepared in the CINCH II project in 2015 and is available from the <http://www.cinch-project.eu> web site.

A university that does not fulfil the requirements in its own teaching program can apply for the right to grant "EuroMaster in Nuclear and Radiochemistry" label "in collaboration" with a specific network member university(ies) or with the NRC network as a whole to complete the lacking offer of courses. In this case the curricula of such a university should state that the required, but not offered studies are carried in another partner university.

As can be seen, the Division on Nuclear and Radiochemistry (DNRC) of the European Chemical Society (EuChemS) (in 2016 named European Association for Chemical and Molecular Sciences) was asked and accepted the task of evaluating applications to grant the NRC EuroMaster Diploma to its students. *Two universities applied for the right to grant the Diploma: University of Helsinki and the Czech Technical University in Prague.* The reviews of the applications were positive and the right to use the Diploma was formally announced at the DNRC Annual Meeting at the RadChem conference in Mariánské Lázně, Czech Republic in March 2018.

It was also decided that "The diplomas (or diploma attachments) should be designed and approved by the DNRC". However, this has never been done and should be addressed if a more widespread use of the Diploma should be pursued.

It should also be noted that there is a substantial difference between "our" NRC EuroMaster and the "European Master of Science in Nuclear Engineering (EMSNE)" awarded by ENEN (the European Nuclear Education Network), which is also referred to as a EuroMaster certificate. Contrary to the EMSNE certificate that is awarded to selected graduates based on their individual achievements, the NRC EuroMaster has been conceived as a "quality label" and is awarded to study programmes that, upon their "positive evaluation by DNRC", acquire the right to award NRC EuroMaster certificates to their graduates. This model closely follows the procedures common in all other fields of chemistry where the ECTNA has been awarding "Chemistry EuroMasters" labels since long (<https://ectn.eu/committees/label/labels/>).

The two universities were contacted for this review. Their report of their usage and experience with the NRC EuroMaster Diploma are as follows:

Prof. Jan John (CTU):

Our PLAN is still as originally anticipated – deliver the EuroMaster diploma to all our MSc graduates meeting the conditions. There were 27 MSc graduates over the last 5 years. The plan has been approved by our faculty administration several years ago but is still "sleeping" – mainly because we have not designed the diploma and started the tradition.

Prof. Gareth Law (UH):

We are graduating on average 3-4 masters students per year that specialize in radiochemistry (and take courses to the credit level required for the Euromaster). Our students seem to see value in the EuroMaster.

We don't award a diploma certificate (at least one has never been supplied to me), instead I give them an appendix to go with their Chemistry degree certificate and official transcript. Basically, we detail what they studied, how this constitutes the Euromaster qualification, and then it's signed by me with the official unit stamp. I think it would be great rekindle Teija's [Teija was a UH CINCH participant] original intention and for us to design something uniform! Looks better for the students.

This short review will be used for further discussion on how to promote the NRC EuroMaster Diploma. Clearly there is two pressing needs:

1. Design a proper an attractive Diploma to be used by all institutions that grant the Diploma.
2. Persuade more universities to apply for the right to grant the Diploma.

This will be followed up in the upcoming work on Task 4.3 in the A-CINCH project.

The detailed procedure for applying for the right to grant the NRC EuroMaster Diploma is provided in CINCH-II (project No 605173) Deliverable 3.1: "Sample NRC EuroMaster Application Package" available from the CINCH web-portal:

https://www.cinch-project.eu/cinch2/data/docs/CINCH2_D1.3_Sample_EuroMaster_app_FULL_TK_prot.pdf