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[www.Mag\(net\)icFun.eu](http://www.Mag(net)icFun.eu)**Our Research Institutions at a glance: Novartis**

The Initial Training Network (ITN) Mag(net)icFun was initially set up between six academic and three industrial partners. Four University partners (University of Regensburg (UREG), ETH Zürich (ETHZ), Trinity College Dublin (TCD), University of Keele (UKEE)) and two research institutes (ICIQ Tarragona and IIT Genova) have hosted a total of 12 ESRs aiming to obtain their PhD degree. Initially, two industrial partners were involved in the network as full partners (Nanotherics (NANO) and MICA Biosystems) hosting one ER each, and one associate partner (TurboBeads, TURBO). As of Oct. 1, 2013 Novartis joined the network as associate partner, following the establishment of joint projects with two academic partners (UREG and ETHZ) of the network. Novartis has offered secondments for ESRs at their research campus in Basel and training (onsite as well as in network meetings), and has acted as an interface between academic and applied research, aiming towards the application of nanoparticles (NPs) in combinatorial library synthesis of drugs.

Novartis International AG is a Swiss multinational pharmaceutical company based in Basel, Switzerland, with over 130'000 employees globally. The company net sales were at 49.4 billion US\$ in 2015. In July 2015, Novartis had a market-cap of around \$280 billion, being the largest healthcare company.

Novartis manufactures such drugs as clozapine (Clozaril), diclofenac (Voltaren), carbamazepine (Tegretol), valsartan (Diovan) and imatinib mesylate (Gleevec/Glivec). Additional agents include cyclosporine (Neoral/Sandimmun), letrozole (Femara), methylphenidate (Ritalin), terbinafine (Lamisil), and others.

In 1996, Ciba-Geigy merged with Sandoz, and the pharmaceutical and agrochemical divisions of both

companies formed Novartis as an independent entity. Other Ciba-Geigy and Sandoz businesses were sold, or like Ciba Specialty Chemicals, spun off as independent companies. The Sandoz brand disappeared for 3 years, but was revived in 2003 when Novartis consolidated its generic drugs businesses into a single subsidiary and named it Sandoz. Novartis divested its agrochemical and genetically modified crops business in 2000 with the spinout of Syngenta in partnership with AstraZeneca, which also divested its



agrochemical business.

Today, the businesses of Novartis are divided into three operating divisions: Pharmaceuticals, Alcon

(eye care) and Sandoz (gene-rics).

The company's global research operations, called "Novartis Institutes for BioMedical Research (NIBR)", have their global headquarters in Cambridge, Massachusetts, United States. Other research sites are located in Basel (Switzerland), Emeryville (California), and Shanghai (China). Two research institutes reside within NIBR that focus on diseases in the developing world: the Novartis Institute for Tropical Diseases in Singapore, which works on tuberculosis, dengue, and malaria, and the Novartis Vaccines Institute for Global Health in Siena (Italy).

Students leaving the network



Vladimir Zlateski, (ETHZ): I joined the Mag(net)icFun network on January 1, 2013, as an early stage researcher with ETH Zurich being the host institution. During the past research years and since the beginning of the project I was focused on the production and functionalization of

magnetic nanoparticles, their subsequent loading with biomolecules (enzymes) and upscaling of the enzymatic reactions so that, we bring the products one step closer to industrially relevant applications. Until now, I have managed to publish 2 first-author and 3 co-author papers, with another first-author paper being in the pipeline. During my PhD, I have attended most of the Mag(net)icFun workshops but also had the chance to attend 3 international conferences.

Thanks to my research group and the whole network I strongly improved my presentation and scientific writing skills and most importantly the ability to plan and execute experiments reached a whole new level. I see this European project as a very successful story. The ease collaboration between the different partners and the positive attitude of the members of the network resulted in some good scientific data but also made all the workshops very enjoyable experiences. On the other hand there was enough time to pursue my hobbies and have a glass of wine with my friends. I strongly believe that after graduation I and my colleagues will have the expertise and the interdisciplinary view on the scientific world, which for sure will open many possibilities both in academia and industry. I am very grateful that I was a part of the Marie Curie Mag(NET)icFun network.

TCD workshop

On March 3 and 4, 2016, the last workshop of the network took place at Trinity College Dublin, Ireland. The following initiatives were presented to the students:

- Applications of magnetic nanoparticles for MRI imaging, and MRI measurements for studying magnetic nanoparticles
- Nanotechnological solutions for cancer diagnostics and treatment
- Scanning Transmission Electron Microscopy and High Resolution Analysis

In addition to the training section, all the Mag(net)icFun students gave presentations on their research projects as part of their Ph.D. or postdoctoral experience being jointly supervised between PIs of their home and host institution.



News from the network

The final meeting of Mag(net)icFun has been held at the University of Regensburg, Regensburg (Germany) from September 19 to 20 2016.

- Fellows publications of the network: <http://www.magneticfun.eu/publication.php>

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