

Radiation damage of biomolecular systems: Nano-scale insights into Ion-beam cancer therapy. 2nd Nano-IBCT conference^{*}

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Abstract. The second Nano-IBCT conference of the COST Action MP1002: Nanoscale Insights into Ion Beam Cancer Therapy was held in Sopot, Poland, from May 20th to May 24th, 2013. The Nano-IBCT action had been launched in December 2010 and brings together experts from different disciplines (physics, chemistry, biology, hadron-therapy centres, medical institutions), with specialisms in the radiation damage of biological matter. This meeting follows up the first one that was held in October, 2011 in Caen, France and we were pleased to see again so many of the participants of the previous meeting as well as to welcome some new colleagues joining and sharing their knowledge and expertise in this field.

The 2nd Nano-IBCT conference, held in Sopot, Poland, May 20-24, 2013, provided the opportunity to review recent progress in the field of radiation damage to biomolecular systems and how such knowledge can be applied to the development of new cancer therapies. This COST action was established as a continuation of the previous COST initiative P9, called Radiation Damage in Biomolecular Systems, RADAM, where the need for deeper understanding of the mechanisms associated with radiation damage was pointed out. Therefore, a new action, Nano-IBCT, was established in order to bring new scientific insights into the physical models behind molecular breakdown and medium interactions upon irradiation.

The conference was attended by ninety five participants, 30% of whom were female, from twenty countries and fifty different institutions. We were particularly pleased to welcome colleagues working in countries outside the EU, including Canada, Australia, India or the USA. Two thirds of those participating were early career researchers and a quarter were postgraduate students half of which were young female researchers.

Also, in total, two thirds of all of the participants were early stage of researchers. The overall attendance of female researchers at the conference was 30%.

The conference hosted twelve thematic sessions, devoted to the topics defined within the five working groups of the COST action (WG1: Ion Propagation, WG2: Primary ionization in the medium, direct damage and production of secondary species, WG3: Propagation of secondary species, WG4: Electron attack on DNA, WG5: Radiobiological scale effects), as well as broad range of related matters, covering such topics as the interaction of plasma with biological molecules or instrumental development for cancer diagnosis and treatment. During the conference we had the pleasure to listen to forty four oral presentations on biological, chemical, physical and medical developments towards ion beam cancer therapy and general radiation research with research carried in both an experimental and computational manner. In order to include all of the important findings, a poster session facilitated another forty presentations enabling more fruitful discussions. All the presentations shown during the meeting, both in an oral and poster form, provided an excellent overview of the current status in ion beam cancer therapy field. The review talks presented each day provided a context for deeper discussions. The managerial boards of the COST action also met at the conference to review progress and plan future research, collaborations and new funding bids. During the conference also the Scientific

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Fig. 1. Participants of the 2nd Nano-IBCT conference: Hassan Abdoul-Carime, Elahe Alizadeh, Małgorzata Antoszevska, Lorenzo Avaldi, Ilko Bald, Ana Bankovic, Aliaksandr Bantsar, Niels Bassler, Hakim Belmouaddine, Paola Bolognesi, Lila Bouessel du Bourg, Steen Brondsted Nielsen, Marion Bug, Gonzalo Cabal, Margherita Casiraghi, Romain Casta, Mattea Carmen Castrovilli, Christophe Champion, Luca Chiari, Konrad Czerski, Iwona Dąbkowska, Marcin Dampc, Marie Davidková, Pablo de Vera, Stephan Denifl, Samuel Eden, Filipe Ferreira da Silva, David Field, Jan Franz, Gustavo Garcia, Francesco Gianturco, Olmo Gonzalez-Magana, Ewa Gudowska-Nowak, Julien Guthmuller, Thomas Haberer, Peter Herczku, Ronnie Hoekstra, Bernd Huber, Sebastien Incerti, Oddur Ingolfsson, Patryk Jasik, Zoltán Juhász, Adrian Keller, Jorge Kohanoff, Janina Kopyra, Sandor Kovacs, Agata Kowalska, Michael Kraemer, SVK Kumar, Sandrine Lacombe, Anne Lafosse, Ireneusz Linert, Marta Łabuda, Sylvain Maclot, Sence Martine, Nigel Mason, Sally McKinnon, Anna Michaelidesova, Aleksandar Milosavljevic, Paweł Możejko, Mikhail Panshenskov, Peter Papp, Julia Prinz, Kevin Prise, Stanisław Pszona, Sylwia Ptasińska, Jenny Rackwitz, Mohammad Rezaee, Michał Ryszka, Giuseppe Schettino, Thomas Schlathölter, Emanuele Scifoni, Jeff Shinpaugh, Józef Sienkiewicz, Michele Siggel-King, Maeve Smyth, Andrey Solov'yov, Patrycja Stefańska, Bela Sulik, Eric Suraud, Gennady Sushko, Pawe Syty, Ewelina Szymańska, Małgorzata Śmiałek-Telega, Maria Antonella Tabocchini, Peter van der Burgt, Alexey Verkhovtsev, Tomasz Wąsowicz, Michael Waligórski, Alexander Yakubovich, Mariusz Zubek, Bożena Żywicka.

and Technical Programme Committee and Management Committee meetings were held, where administrative and scientific initiatives were discussed.

It is our greatest hope that the 2nd Nano-IBCT meeting was an enjoyable and scientifically fruitful

experience for all the participants and will result in many new ideas and collaborations. We are looking forward to the final meeting of the COST MP1002 action that is to be held 27-31 October 2014, in Bellevue Rheinhotel in Boppard am Rhein, Germany.