

SOLID URBAN WASTE MANAGEMENT

XXI IUPAC CHEMRAWN
CONFERENCE

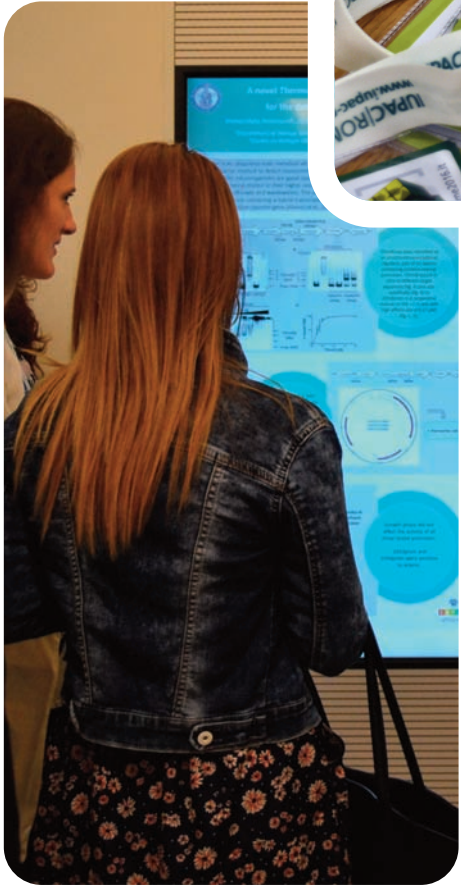
Rome April 6|7|8 2016

CNR Headquarters Piazzale Aldo Moro, 7



BOOK OF
ABSTRACTS

www.iupac-rome2016.it





Huge amounts of wastes are produced yearly all around the world. The amount of Solid Urban Waste, one of the most important by-products of an urban lifestyle, is growing even faster than the rate of urbanization.

Poorly collected or improperly disposed waste and lack of enforced regulations, mainly in low and middle-income countries, can have a detrimental impact on the environment due to contamination of groundwater and surface water by leachate, as well as air pollution from burning of waste.

The aim of XXI IUPAC CHEMRAWN Conference, Rome April 6-7-8 2016, has been to present a comprehensive perspective on the current challenges of Solid Urban Waste Management and new directions for their exploitation, especially through a 'from waste to resource' approach.

The Conference has brought experts from the urbanized world together, as well as experts from Developing Countries, in representation of 33 Countries, giving an opportunity not only to scientists from many disciplines, but also to organizations, policy makers and experts, to meet and discuss future trends and action required.

During the event local, national and international realities have shared methods and best practices jointly addressing the most pressing issues and comparing the different solutions.

The XXI IUPAC CHEMRAWN Conference in figures:

APRIL 6|7|8 | 2016

4 Thematic oral sessions:

ENERGY FROM URBAN WASTE
 MATERIALS RECYCLING, TRANSFORMATION AND RECOVERY
 FROM ORGANIC WASTE TO RESOURCE
 EDUCATION TO SUSTAINABLE WASTE MANAGEMENT

4 thematic poster sessions

**1 Open Discussion on Policy Issues
 and recommendations**

**1 Industrial session on Current technologies
 and future perspectives**

94 Abstracts submitted representing 20 Countries

78 Speeches

55 Poster contributions

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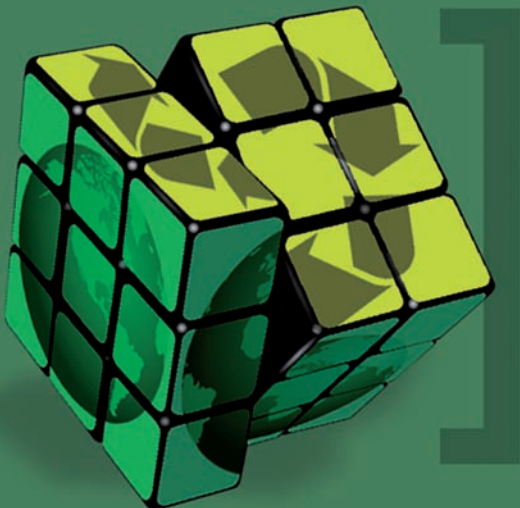
SESSIONS

ENERGY FROM URBAN WASTE

MATERIAL RECYCLING,
TRANSFORMATION AND RECOVERY

FROM ORGANIC WASTE
TO RESOURCE

EDUCATION FOR SUSTAINABLE
WASTE MANAGEMENT



FROM WASTE TO NEW BIOBASED EDIBLE COATINGS

An ecological approach to improve the safety and shelf-life of foods

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The aim of this work is the utilization of sugar industry waste: sugar beet pulp and molasses, as a new approach for manufacture of raw chemicals that can be further converted into valuable products for food packaging industry. Dextranase is one of the main enzymes which catalyze the transfer of D-glucopyranosyl residues from sucrose to biopolymer dextran. New approach proposed the use of sugar beet pulp as a supporter for cells immobilization and molasses as the source of nutrient for production of dextranase by natural isolate from water kefir grain. Afterwards, the dextranase was purified and incubated in 5% sucrose/sodium acetate buffer solution (pH 5.4) at 30 °C for 48 h, in order to produce dextran. Dextran obtained by this procedure was used for preparation of edible biobased coating to prolong shelf-life of tomato. In order to improve mechanical properties of these coatings, poly(glycerol) was added. The dextran coatings were characterized by mechanical and thermal properties. Moreover, the tomato was coated with dextran film and evaluated periodically for various quality parameters. The tensile strength and elongation at break of dextran coatings was 1.62 MPa and 230%, respectively. Dextran coatings showed adequate thermal stability and could be safely used for applications up to 200°C. The coated-tomato reduced texture softening, weight loss and acid production compared with the uncoated tomato, which implied the prolongation of tomato shelf-life.