

EIT RawMaterials, Associazione Mineraria Sarda & Ordine degli Ingegneri della Provincia di Cagliari Joint Symposium

Sulcis International Meeting

20th November 2020

Session I: 9.00 - 13.00 | Session II: 15.00 - 18.00

On-line event: ZOOM platform



 EIT RawMaterials is supported by the EIT
a body of the European Union



Consiglio Nazionale delle Ricerche



Agenzia nazionale per le nuove tecnologie,
l'energia e lo sviluppo economico sostenibile



ASSOCIAZIONE MINERARIA SARDA



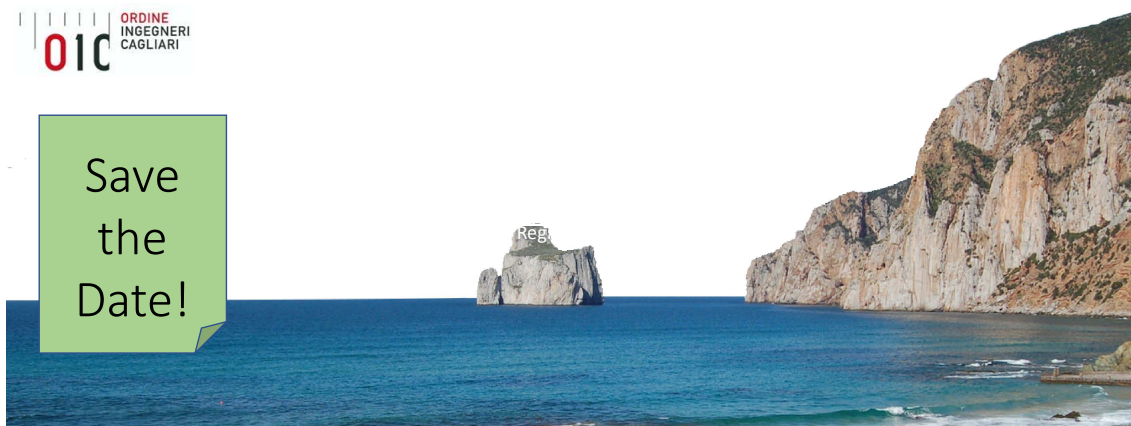
EIT RawMaterials, Associazione Mineraria Sarda &
Ordine degli ingegneri della provincia di Cagliari



L'Europa alla portata della vostra impresa.



Save
the
Date!



Since three years, the EIT RawMaterials, Associazione Mineraria Sarda and Ordine degli Ingegneri della Provincia di Cagliari are collaborating aiming at:

- discussing new raw materials supply strategies, based on the identification of new mining sites, on the environmental remediation of closed mining sites and on the value recovery from end-of-life goods through circular economy approaches
- disseminate within the society the science and the technology on which is based the raw materials supply, and their use and exploitation to obtain our daily life goods on which is based our well-being
- involve politicians, entrepreneurs and industrialists in these discussions, in order to generate the virtuous cycle that leads from the political decision-maker to investments in innovative technologies through support for entrepreneurship, including young people

This collaboration is now reaching its third stage. During the joint symposium in 2020, scientists, researchers, industrial managers, entrepreneurs and policy makers will discuss on raw materials and the circular economy topics. During the morning, successful cases and new points of view will be presented on the theme of end-of-life goods value recovery.

Through the afternoon matchmaking events, already ongoing collaborations will be consolidated, and new initiatives between research, industry and universities will be promoted. At the same time, new European funding instruments to support the innovative entrepreneurship will be introduced to the audience.

Agenda Sulcis International Meeting

Introduction to day

h 9:00 - 9:15

“Salutes of welcome”

AMS - *Dr. Enrico Contini*, Associazione Mineraria Sarda

OIC - *Ing. Angelo Loggia*, Ordine degli Ingegneri della Provincia di Cagliari

CNR - *Dr. Paolo Dambruoso*, ISOF - CNR Area della Ricerca di Bologna

ENEA - *Dr. Michele Penza*, ENEA Brindisi - EIT RawMaterials Regional Center Southern Italy

EIT RM - *Dr. Fabio Pegorin*, EIT RawMaterials - CLC South Business Development Manager

Circular economy Session: Chairman Paolo Dambruoso

h 9:15 - 9:35

“The EIT RCSI RawMaterials: mission, objectives, strategies and goals”

Dr. Marco Alvisi, ENEA - Business Development Manager of EIT RawMaterials RCSI

h 9:35 - 9:55

“Circular economy initiatives and platforms at European and Italian level - Focus on ICESP (Italian Circular Economy Stakeholder Platform) activities”

Dr. Grazia Barberio, Head of section for the Circular Economy, Department for Sustainability (SSPT-SEC); Italian National Agency for New Technologies, Energy and Sustainable Economic Development ENEA

h 9:55 - 10:15

“Industrial wastes: a valuable source of raw materials”

Dr. Claudia Belviso, Istituto di Metodologie per l'Analisi Ambientale IMAA-CNR

h 10:15 - 10:35

“EIT RawMaterials: portfolio and opportunities in the Circular Economy domain”

Dr. Pier Luigi Franceschini, EIT RawMaterials CLC South

h 10:35 - 10:55

“Perlite industrial mineral: key attributes, functionalities and innovative applications”

Dr. Marco Aurelio Bonansea, Imerys Perlite Sardinia srl

h 10:55 - 11:10

Coffee break

Innovation Session: Chairman Paolo Dambruoso

h 11:10 - 11:30

“The circular economy applied to the reclamation of mining areas disused in Sulcis-Iglesiente-Guspinese”

Dr. Enrico Contini, Associazione Mineraria Sarda

h 11:30 - 11:50

“Circular economy for a sustainable future: recovery and reuse of permanent magnets”

Dr. Fabio Canepa, Department of Chemistry and Industrial Chemistry, University of Genova

h 11:50 - 12:10

“CASE STUDY: SASIL LIFE - Recycling of waste glass: saving energy and resources”

Dr. Giulio Biglia, Technical Sales - Minerali Industriali Engineering Srl

h 12:10 - 12:30

**“The new frontier of mining activities in Sardinia through the re processing of mining disposal facilities
State of the art and perspectives”**

Dr. Maurizio Boaretto, Mining Engineer - 3ESSECI srl consultants, member of Group Mining and Quarry of Industrial Association of Southern Sardinia

Education Session: Chairman Paolo Dambruoso

h 12:30 - 12:40

“MineHeritage: Opportunity and perspectives for exploitation of Historical Sardinian Mining Sites”

Dr. Davide Peddis, National Research Council, Institute of Structure of Matter - Department of Chemistry and Industrial Chemistry, University of Genova

h 12:40 - 13:00

“Smart heritage tourism - cultural heritage digital fruition systems based on 3D visualization technologies integrated by external data”

Dr. Jorma Ferino, SJM-Tech s.a.s.

h 13:00 - 15:00

Lunch break

Matchmaking Session: Chairman Marco Alvisi

h 15:00 - 15:10

“Starting afternoon session”

Dr. Marco Alvisi, ENEA - Business Development Manager of EIT RawMaterials RCSI

h 15:10 - 15:35

“Funding opportunities and activities and the CLC Innovation hub south”

Dr. Fabio Pegorin, EIT RawMaterials - CLC South Business Development Manager

h 15:35 - 16:00

“Remote sensing and seismic monitoring in the mining sector”

Dr. Vittorio Cannas, SpacEarth Technology srl

h 16:00

Opening rooms

Room 1: Education - Chairman Fabio Ferri, EIT RawMaterials - CLC South

Room 2: Business creation/Upscaling/Acceleration - Chairman Fabio Pegorin, EIT RawMaterials - CLC South

h 17:45

Closing rooms

h 17:45 - 18:00

Conclusions and closing

Further Information

The participation is free of charge. After registration the participants will receive a ZOOM link to follow online the scheduled events.

Registration

The free of charge registration should be applied here: <https://forms.gle/LHS5mBkaFqZqBQ3Y8>

Language

English is the official language. The presentation slides will be in English, but they will be commented in native language (Italian) of the RCSI area.

Contact

Email: info@eitrawmaterials-rcsi.eu - sulcis.matchmaking@gmail.com

Website: www.eitrawmaterials-rcsi.eu

RCSI Coordinator: Dr. Michele Penza - michele.penza@enea.it

Organized by:



Supported by:



Kindly participated by:



Invited Speakers



Marco Alvisi, researcher at ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic Development. He works for the Strategic Support Unit of the Direction of the Department and he is in charge of supporting the valorisation of the research results of the Department, especially in the sector of Advanced Manufacturing and Raw Materials (KIC, Clusters, etc.), supporting the policy and strategy of the Department with institutional and industrial actors in the Apulia region (Industrial Associations, Regional and Local governing bodies, local RTO, Industrial Technological District, etc.). His business developing manager of the Regional Center Southern Italy of the KIC EIT RawMaterials. As senior tech transfer expert, he is senior project officer of Enterprise Europe Network from 2011 and Key Account Manager and senior innovation adviser (EIMC services) for EASME from 2014. Main scientific activities are in PVD methods used to obtain coatings and metal nanoclusters for fuel cells and catalysis of sensor active materials. He has co-authored more than 75 scientific papers (H index 23) published in leading refereed journals in thin films, surface technology and gas sensor devices fields, participating periodically at the major national/international conferences in material science. He is author of 4 Italian patents on polymer nanostructures, gas sensors and reference materials.



Grazia Barberio, PhD in environmental Science. She is head of Section for Circular Economy in ENEA, where is researcher since 2005. Main expertise is on: new economic models, in particular circular economy; ecoinnovation; sustainability evaluation, development and application of LCA (Life Cycle Assessment) and Ecodesign methodologies; Industrial Symbiosis. She is involved in several EU funded projects concerning resource efficiency and sustainability evaluations of products /technologies in the field of nanomaterials, renewable energy, green chemistry, residues valorisation and waste integrated management. Member of the many networks and expert groups at national and international levels on sustainable process, circular economy, industrial symbiosis, LCA, she actually is the technical coordinator of Italian Circular Economy Stakeholder Platform (ICESP). She is lead author and co-author of several scientific papers published on international peer-reviewed journals and proceedings of national/international conferences.



Claudia Belviso is researcher at Institute of Methodologies of Environmental Analysis (IMAA) of CNR. Graduated in Geological Sciences and qualified as a professional geologist, she earned Ph.D. title in Earth Sciences at the University of Bari. Since 2002, she has been carrying out her research activity in the field of mineralogy and geochemistry aimed at environmental protection. She is responsible of the research activity on zeolite synthesis from waste materials (e.g. fly ash and red mud) and natural sources as well as their application to solve environmental problems and as new raw material. These research activities have allowed her to be inventor of an International Patent about zeolite synthesis from fly ash; to publish numerous scientific articles in peer reviewed journals; to participate in international and

national conferences; to take part on the organization of international congresses and national and international scientific schools and to carry out scientific researches in national and international projects, supported by public and private institutions.

References:

- [1] Claudia Belviso, Progress in Energy Combustion Science (2018) 65, 109-135.



My name is **Giulio Biglia**, I'm geologist, since three years I'm sales manager and marketing responsible at MINERALI INDUSTRIALI ENGINEERING SRL company (plants and machineries division), a new start-up full controlled by MINERALI INDUSTRIALI SRL, Italy. After my university studies I worked for several years abroad, before as technical geologist in South Africa and later as exploration geologist consultant for different junior gold mining company especially in South America, Middle East and Europe as well.

From 2016 to 2018 I worked as assistant researcher at University of Turin for SmartGround European Project, Horizon 2020. The aim of the project was focused on circular economy especially for the recovery of critical raw material from disposal mine in Europe.



Maurizio Boaretto, Mining Engineer, born in Padua 21st September 1951, graduated at Cagliari University in 1977. Main Jobs: AGIP SpA, Coal Department, Carbosulcis SpA, Underground Maintenance Manager, Development and Design Manager, Mine Manager of Silius Fuorspar Mine, Health and Safety Mining Consultant, Mining Project Consultant in Ukraine, Russia, Mexico, Iran and Sardinia. Presently Manager of Mining Operation at POLAR Srl. Member of the Order of Engineers of Cagliari Province, Member of Mines and Quarry Section of Industrial Association of Sardinia, Member of Associazione Mineraria Sarda, Member of Scientific Committee of Fondazione Stava 1985.

References:

- [1] Graziano Lucchi, Giovanni Tosatti, Maurizio Boaretto: An educational path to rediscover the history, the tools and the techniques for mining fluorite in the Prestavèl mine (Trento Province, Italy); 9th International Symposium on Archaeological Mining History; MuSe – Trento, 5-8 June 2014.
- [2] Maurizio Boaretto: Le nuove tecnologie di gestione degli sterili con impianti a filtro pressa; La sicurezza dei riempimenti in terra: bacini di decantazione, colmate e discariche Convegno trentennale Stava 2015.
- [3] Maurizio Boaretto: Le nuove tecnologie per abbattere i rischi connessi alla costruzione e gestione dei bacini di sedimentazione fanghi; Corso di aggiornamento Nuove Norme Tecniche sulle Costruzioni Eurocodice 7 Ordine Ingegneri Cagliari.



Marco Aurelio Bonansea, Mining Engineer with over 35 years of experience in Industrial Minerals Ore, Process and applications. Projects Manager of industrial minerals beneficiation plants erection and commissioning (Phosphate, silica sand, kaolin, feldspar, talc, ball clays and bentonite ores) throughout the Mediterranean basin. General Manager and CEO of industrial minerals legal entities in Italy and Egypt.

Deep knowledge of industrial minerals of Sardinia where he contributed to the development of the exploitation of important deposits. Today CEO of Imerys Perlite Sardinia and consultant of innovation and merger and acquisition projects in the industrial minerals sector. Graduated in Mining Engineering at the Polytechnic of Turin; MBA from SDA Bocconi.



Fabio Canepa. He is associate professor of the University of Genova, Department of Chemistry and Industrial Chemistry. He is co-author of more than 130 refereed publications on international journals and he participated, with oral presentations, to several National and International Conferences and Meetings. He began his research activity in the field of the magnetism of the Rare Earth intermetallic compounds, analyzing from the experimental and theoretical point of view several light and heavy Rare Earth metallic phases. Later on, he focused his attention to the phenomenon of the

Room Temperature Magnetic Refrigeration, discovering and studying some new compounds useful for this technological improvement. At present his research is mainly devoted either to the characterization of magnetic structures formed by different configurations of permanent magnets and to the development small hydraulic circuits with water as vector fluid carrying magnetic nanoparticles. The target is to achieve, by these simulations, information about the capture of nanoparticles by a system of small permanent magnets for *in vivo* biomedical tests (magnetic drug delivery on mice) as well as about the capture of toxic heavy metal ions derived by water discharge of wastewater treatments.

References:

- [1] Diez-Jimenez, E., Perez-Diaz, J.L., Canepa, F., Ferdeghini, C., Invariance of the magnetization axis under spin reorientation transitions in polycrystalline magnets of Nd₂Fe₁₄B, (2012) *Journal of Applied Physics*, 112 (6).
- [2] Jose Luis Perez-Diaz, Efren Diez-Jimenez, Ignacio Valiente-Blanco, Cristian Cristache, Marco-Antonio Alvarez Valenzuela, Juan Sanchez Garcia Casarrubios, Carlo Ferdeghini, Fabio Canepa, Wolfgang Hornig, Giuseppe Carbone, Jan Plechacek, António Amorim, Tiago Frederico, Paulo Gordo, Jorge Abreu, Violeta Sanz, Elisa Maria Ruiz Navas and Juan Antonio Martinez Rojas, Performance of Magnetic Superconductor Non Contact Harmonic Drive for Cryogenic Space Applications, *Machines* (2015), 3, 138-156.
- [3] Diez Jimenez, E., Perez Diaz, J.L., Ferdeghini, C., Canepa, F., Bernini, C., Cristache, C., Sanchez-Garcia Casarrubios, J., Valiente Blanco, I., Ruiz Navas, E.M., Martínez Rojas, J.A. Magnetic and morphological characterization of Nd₂Fe₁₄B magnets with different quality grades (2018) *Journal of Magnetism and Magnetic Materials*, 451, pp. 549-553.
- [4] S.Villa, P.Riani, F.Soggia, E. Magi, F.Canepa Thiol-functionalized magnetic nanoparticles for static and dynamic removal of Pb(II) ions from water, *J. Nanoparticles Research* (2019) 21:44.
- [5] A.Omelyanchik, G.Lamura, D.Peddis, F.Canepa, Optimization of a NdFeB permanent magnet configuration for in-vivo drug delivery experiments, *J. Magn. Magn. Mater.*, (2020) in press.



Vittorio Cannas. President at SpacEarth Technology Srl, a spinoff company of Istituto Nazionale di Geofisica e Vulcanologia, his focus is on business development and R&D projects coordination in the aerospace, environment, and raw materials sectors at international level.

He graduated in Physics at the University of Cagliari and holds an MSc in Telecommunications from University College of London and a Master's in Management from Politecnico di Milano Graduate School of Business.

He has worked as a Senior Researcher at the University of Paris and at Istituto Superiore Mario Boella of Turin has been Program Manager at the Lazio Aerospace Technology Cluster and at General Electric Aviation Business. He is also expert evaluator of R&D programs and mentor of high-tech startups at the Copernicus Acceleration program of the European Commission.



Jorma Ferino - Ceo SJM TECH. His professional training began in Milan in 1998 where he attended a course of Digital Cartography held by the Italian Touring Club. In 1999, after a training internship at the De Agostini Geographical Institute he obtained the qualification of Graphic and Technician of digital cartography.

After completing this training phase, he started freelancing with the De Agostini Geographical Institute and the Italian Touring Club.

His educational path continued simultaneously with his professional activity. In 2001 he graduated from the SAE Institute in Multimedia Producer.

After completing this training experience he participates in the development of various web projects as web designer/web project manager.

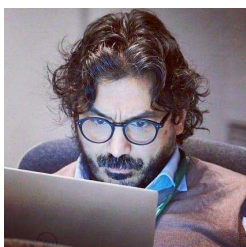
Back in Cagliari in 2003 he continued his freelance activity as a web designer and web project manager, collaborating in some web marketing promotion campaigns of Microsoft XBoX video games.

Since 2005 he is the Owner and Co-Founder of SJM TECH company that operates in the ICT sector and 3D visualization technologies. His role within the company is to design new three-dimensional visualization tools for cultural, industrial, engineering and biomedical sectors; as well as in visual communication, and in the web design sector.



Pier Luigi Franceschini is working since 2016 as Director of the Innovation Hub South of the EIT RawMaterials. In this position he is overseeing and stimulating innovation and education programmes and servicing a partnership of 21 institutions (industries, universities and research centers) belonging to the largest worldwide partnership in the raw materials value chain. Trained as an industrial chemist (University of Rome – La Sapienza), Pier Luigi also received a PhD in Materials Science from the ETH Zurich. Prior to joining the EIT RM he covered several positions including a Postdoc at the University of Zurich, process engineer at Engelhard (now BASF), and finally he spent 12 years in a major consulting company in Italy: in this role he gathered expertise in IP management,

technology transfer, innovation and R&D management.



Davide Peddis (DP) - is Associate Professor of Physical chemistry at University of Genova and associate researcher at CNR-ISM. Research activity of DP is developed in the framework of Solid State Physical-Chemistry presented in over 110 peer reviewed papers (google scholar citations: ~3200; h-index:29) and 5 book chapters as main author. DP won as principal investigator several national and international competitions for research mobility, experiments at large scale facilities and research projects. DP has been granted over 1 million of euro to date, coming for national and EU project. Since 2002 DP has been involved in several popular science events, both as an organizer and as a speaker. He is also a member of the Didactic Division of the Italian Chemical Society, founder partner of the association *ScienzaSocietàScienza* and member of its board in the period 2014-2018. He is founder partner and vice president of the association *Science is Cool* (<http://www.scienceiscool.it/>). He also team member in several national educational project and local coordinator of EU MineHeritage (<https://mineheritage-project.eu/>), funded by the EIT raw materials.



Fabio Pegorin serve *EIT RawMaterials – CLC South as Business Development Manager* since 2018. Within the range of the KIC (knowledge and innovation community) strategic objectives and goals the purpose of this job as a business development manager is to initiate, enable and support the KIC network of partners and other stakeholder in order to cover especially the KIC areas of activities in Matchmaking & Networking (M&N), in Validation & Acceleration (V&A) as well as in Business Creation & Support (BC&S). With a dedicated focus on the Southern European regions the main purpose is (1) to support existing KIC partners and to recruit new ones, and (2) to stimulate regional business development by triggering the emergence of new ideas and innovations, connecting complementary people (innovators and entrepreneurs) and ensuring that infrastructures, knowledge and innovative approaches are shared amongst partners for mutual benefit.



The **Associazione Mineraria Sarda** (Sardinian Mining Association - AMS) was founded in 1896 by mine owners, directors, technicians, which operated in the Sardinian Districts. It is the oldest mining association in Italy. Today, the AMS is a cultural and scientific association whose main mission is to preserve, promote and enhance the mining culture in Sardinia and Italy. The main activities of AMS are focused on technical and cultural initiatives through meetings, workshops, conferences, and international relations also oriented towards environmental rehabilitation of mine sites, sustainability of mining, circular economy. The AMS supports the mining activities still operating in Sardinia, making a connection among the Regional Government of Sardinia, University and Mining schools. Raw materials are a critical theme for AMS. The scientific journal of the AMS (*Rendiconti dell'Associazione Mineraria Sarda*) and thematic volumes edited by AMS are important sources of scientific and technical data related to raw materials recovery from mining wastes in Sardinia and other regions. The AMS preserves its old archives as an historical record for the future developments on these areas.