



RESSOURCES21

After several weeks in development, the LabEx RESSOURCES21 website was restored in November 2014 and is now live. The new website features news of our recent developments, current projects and future directions. We invite you to discover the site on Resources21

RECRUITEMENTS



Andrey Myackyi and Antony Van der Ent have been recruited for PhD and Post-doc positions, respectively, in the framework of the RESSOURCES21 Nickel 2014-2017 project. **Thomas Bouslesteix** rejoined the "Potassium Argon Laboratory"

ARTICLES

CAUMON G., COLLON P., 2014. Special Issue on Three-Dimensional Structural Modeling. *Mathematical Geosciences* Special Edition 2014. URL: SpringerLink

CAUMON G., LAURENT G., JESSEL, M. of the IRD (currently at CET in Perth), 2015. Interactive editing of 3D geological structures and tectonic history sketching via a rigid element method. *Computers & Geosciences* Vol. 74, January 2015, p.71–86. URL: Sciencesdirect

VAN DET ENT A., BAKER A., MOREL J-L, ECHEVARRIA G., SIMONNOT M-O et al. (Researchers from Lorraine behind the "Agromining" label (Agromine)). Agromining: Farming for Metals in the Future? *Environmental Science and Technology*, February 2015. URL: ACS Publications

THESIS DEFENSES



Sandoïn Coulibaly - 9 July 2014 Abattement des phosphates des eaux usées par adsorption sur les géomatériaux constitués de latérite, grès et schistes ardoisiers.

Bonnet Julien - 11 December 2014 Les métaux stratégiques Ga, Ge et Cd dans les gisements à Pb-Zn : Exemple des MVT du Tennessee.

Dargent Maxime - 17 December 2014 Spéciation et réduction de l'U(VI) dans les fluides chlorurés acides en condition hydrothermale : Du transport au dépôt de l'U dans les gisements sous discordance.

Pablo Meija - 16 December 2014 Apport de la modélisation 3D et de la restauration structurale dans la compréhension de gisements de matières premières minérales. This PhD was undertaken as part of the PROMINE European project and received co-funding from the RESSOURCES21 LabEx.

Le Mignot Elodie - 18 December 2014 Les gisements d'or comme témoins de l'histoire géologique du craton ouest-africain - Apports de la datation.



VISITING RESEARCHER



Pr Alan Baker of the University of Melbourne (Australia), a pioneer of the phytomining technique, was invited to Nancy by the RESSOURCES21 project for a two-month visit. Through joint publications, co-supervision of doctoral students and structural organisation of the scientific community, the LabEx and Lorraine will be able to position themselves at the forefront of international research. During his stay, Alan Baker presented a seminar entitled "Phytotechnologies"

PRIZE

Quentin Dehaine was awarded a prize in the "Doctoral student" category by the Société de l'industrie minière for his work conducted under the supervision of **L. Filippov** (9 October 2014, Bordeaux).



TRANSFER OF KNOWLEDGE TO THE GENERAL PUBLIC



A wiki on the strategic metals: Two second-year students from ENSG (Alix Marchal and Quentin Lespagnol) developed a collaborative website (or WIKI) during their 3-month work-placements at RESSOURCES21. The goal of the wiki project is to raise public awareness about the importance of raw materials and, in particular, the rare and strategic metals. The wiki provides easily-accessible information on the socio-economic and political issues that surround the cycle of metals (their exploration, exploitation, processing and recycling). To find out more, visit the Les métaux stratégiques - Les ressources du XXIème siècle website:

[Wiki](#)



Public lecture on the recycling of metals at Maxéville Town Hall: "Every day, we consume the equivalent of 500 Eiffel Towers", explains **Marie-Christine Boiron**, one of our researchers, who gave a lecture in the Salle du Parc at Maxéville Town Hall in November 2014 on primary (mining) and secondary (recycling) deposits and the environmental impacts of this over-consumption.

ORGANISATION OF MEETINGS OF THE ERA-MIN FRENCH MIRROR GROUP

The Lorraine members of the ERA-MIN project (RESSOURCES21 and DAMAS, as well as the IJL) have taken over the reins as organisers of the French "mirror-group" meetings. The role of this group is to organise and oversee the structuring of the national research landscape in the field of mineral raw materials, encompassing the entire value-chain (primary and secondary resources, recycling and substitutions) as well as parallel issues such as training, international collaboration and social acceptability. The third meeting, which took place in Nancy on the 24th September 2014, enabled the group to re-establish contact with all the different national stakeholders (industry, universities, public agencies) and reinvigorate the field with a view to integrating the various French actors into the KIC RawMatTers project. The meeting also provided an opportunity to review developments in the field, leading to fruitful discussions and rich sharing of experiences.

FOCUS ON EUROPEAN PROJECTS



The scientific excellence of the collaborative research and innovation projects undertaken in the Lorraine Geoscience laboratories, along with the dynamism of all the teams involved, has been translated into the approval and funding of five European projects.

BioMore: Total funding: 8.6 M€, CNRS funding: 387 k€. Launched in February 2015 and made up of 23 partners, including three teams from the Georessources Laboratory (Modelling, Processing and Mineral Resources), the BioMore project is managed by the CNRS. The project seeks to combine hydrofracturation and bioleaching procedures to enhance the exploitation of mineral resources and deep deposits.

European Cooperation in Sciences and Technologies (COST): Approved in November 2014, COST is a network of European scientists working on critical elements used in technology, covering all aspects of the subject from environmental issues to threats to human health. Through assessment of the current state of knowledge and identification of potential obstacles, COST seeks to establish priority research directions and to act as an interface for the setting up of new collaborations and joint research projects.

FAME "Flexible And Mobile Economic Processing Technologies": Total project funding: 7.9 M€, UL funding: 1.01 M€. The FAME project aims to develop intensive and ecological technologies for recovering strategic elements (metals) from skarns, greisens and pegmatites. Through the development of flexible, mobile and economical processing technologies and the creation of a new raw material base in Europe, FAME seeks to increase awareness of raw materials in order to open up access to European deposits. The "Resource Development" team at RESSOURCES21 has been heavily involved in the setting up of this project and coordinates the "WP5 - Process intensification" work programme.

KIC Raw Materials: The University of Lorraine, and notably the RESSOURCES21 LabEx, formed part of a winning consortium in the EIT KIC Raw Materials project call. The partnership was graded 'excellent' in terms of job creation and knowledge generation. The only consortium in this theme to be financed by the European Institute of Technologies-EIT, the KIC unites around 100 partners from academia, industry and applied research from 20 member States. KIC Raw Materials will reinforce synergies between the different parties drawn from higher education, research and innovation. The project aims to support value creation by providing guidance in innovation, assistance for the creation of start-ups and through the development of training opportunities linked to new scientific and technological practices in the field. One of the six European hubs, that of the Franco-German section, will be located in Metz.

NewOres Eramin: Approved by the ERA-MIN network in 2014, the NewOres project has been awarded a total budget of 325,000€, a third of which has been granted to the University of Lorraine. The French (the RESSOURCES21 and VOLTAIRE Laboratoires d'excellence) and Portuguese partners share two main objectives: to reassess the metallogeny of rare metal resources in Europe (notably in France and Portugal), and to develop new technologies for the processing of mineral ores.