

VALUTAZIONE 2000-2004:

DOCUMENTO COLLEGIALE DEL PANEL DI ESPERTI ESTERNI:

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PARTE V

Final common report on the evaluation of the “Dipartimento di Mineralogia and Petrologia”, University of Padua

1. DEPARTMENT ASSESSMENT

This is a common report by the external panel set up to evaluate the Dipartimento di Mineralogia e Petrologia (DMP), University of Padua. This document summarises the main conclusions of reports written by individual members of the panel, and integrates the results of the visit to the DMP, held on 1st-2nd of February 2006. Additional details can be found in the reports of each member of the panel. The evaluation panel is composed by the following members:

Boriani Attilio, University of Milano
Peccerillo Angelo, University of Perugia
Saxena Surendra, Florida International University, Miami, USA
Friedrich Seifert, University of Bayreuth, Germany
Skogby Henrik, Swedish Museum of Natural History

Section 1b: Institutionalised collaboration agreements

There seems to be a sufficient number of institutionalized agreements at local, national and international levels. The involvement in the ESF Eurocore is to be mentioned. However, collaboration in research in networks, e.g. of the EU is lacking and the collaboration between DMP and other local institutions is not at the same level as of other Italian University Departments. The DMP should try harder to acquire resources from EC and improve collaborations with local authorities and industry.

Section 2: Mission of the Department

The mission of the department is essentially oriented to fundamental research. The close connection between research and teaching (also on the post-graduate level) and the activity outside the geosciences proper (e. g. cultural heritage) is highly appreciated. However, applied research, which is also necessary for increasing funding and establishing links between DMP and the provincial industries is not much developed. Research fields, such as materials science, which is not significantly different from basic research, should be considered for future developments.

Section 3. List of research programs

There will be extensive comments on the individual programs below. A general point is that programs are somewhat artificially constructed and do not represent coherent research projects. Little is said in the self-evaluation report about synergies with other geoscience institutions in Padova, such as the Department of Geology of the same University. During our visit to the Department we have verified that the collaboration is very weak or absent. More comments follow further down when the proposal for the formation of a large Earth Science Department will be discussed.

Section 4: Human resources

The decrease in the number of docents by one quarter over the five year's period is indeed alarming, but the department is to be congratulated for the very good quality of science produced. The distribution of research staff among the various categories, from Full Professor to Associate Professor and Ricercatore Universitario, is anomalous because of the very low number of Ricercatori. This, however, is an anomaly that is very common in Italy. Overall, on an international basis and especially with respect to the U.S. standards, the human resources, and especially the technical staff, seems satisfactory.

Section 5: Financial resources

There seems to be a shortage of funds for central facilities and teaching equipment. On the other hand, the overall funding for research projects and for purchasing large equipment has been adequate in the years 2000 - 2004. In comparison to other situations in the US or in other European countries, the financial resources are inadequate for keeping the library operational and for the maintenance of instruments. On a national basis, however, they are above average.

Section 6: Material Resources

These seem to be adequate. Despite the age of some of the large instruments the equipment is functioning and is also available for external use. A museum with a curator and a good library would integrate these assets.

Section 7: Relations with other research institutions

The staff members collaborate actively with scientists worldwide, often on an informal basis as it may be seen from the large number of co-authored papers. These contacts could—be further improved, especially for the training PhD students. Contacts with local governments have been established and some of them have produced rather significant amounts of funds. However, this funding should increase.

Section 8: External consulting etc.

At the moment this activity is not much developed, but, according to statements by the DMP Head, it would expand in future to represent a significant source of funding. While we encourage such activity, it should not be pursued unless fundamental and applied research is involved.

Section 9: Other activities

The department staff members actively participated in the 32nd IGC and have been serving in the Editorial Boards of national and international journals, although this activity has been decreasing lately.

Section 10: Postgraduate programs

The internationalization of the Doctorate program is highly appreciated. Students are fairly well distributed among the programs and mostly among the young tutors. Our meeting indicated that only few students go abroad and use other national and international facilities. They also do not participate in international conferences. Office space for PhD students is reported to be scarce.

Section 11: Research Products

Research productivity in terms of quantity of publication and quality of journals in which these are published, is very good. The large number of abstracts also shows an active participation in scientific meetings. Overall, the rating of the scientific quality of the publication is very good at the national level, as also proved by the recent CIVR exercise, but not internationally. However, it has to be pointed out that a fairly large number of publications (about 40%) is in national journals and presented at national meetings.

Section 12: SWOT analysis

A comment on the decreasing number of docents has already been made above (Section 4). Compared to other Italian Universities (average 90h per year) the actual teaching load of the docents of 141 hours is indeed excessive.

Comments on strengths and weaknesses of individual programs are incorporated into the discussion below.

Section 13 Position of Department within national and international context

Italian context: ISI parameters for publications indicate that the research activity for the DMP as a whole is impressive at the Italian level. The Department also hosts several facilities that are used by researchers from other Universities, which contributes to an increase in the reputation of the Department. Finally, the international school of Doctoral studies coordinated by members of the DMP, has also increased the prestige of the DMP at national and international level. Some of the research faculty (e.g. FP Sassi) are well represented in national scientific bodies, committees, societies etc. and have received national recognition. Such a strong involvement, however, seems to decrease with time.

International context: Some research staff of the Department has been serving as Editors or in the advisory boards of several international journals; they organized international meetings, short courses and have been invited speakers at several conferences and meetings. A few guest professors spent their sabbaticals at DMP. These international contacts could certainly be strengthened by more exchange of both younger and senior scientists. The decrease of national and international projection of research staff with time has been already mentioned.

Section 14: Indicators for future strategy

Research: It is essentially suggested that DMP continue along the well-established lines of research, but with some innovation, by expanding the research activity to geochemistry and materials sciences.

It is recommended to pool the technical staff, as much as possible, into central facilities (joint thin-section lab, electronics, computing, mechanics) and this way alleviate the problem of technical staff scarcity.

The formation of a larger Geology department was discussed during our visit to the Department. We noticed a strong opposition to such an integration. In

principle, a bigger Department should be welcome because of better synergies among earth scientists, new and larger central facilities, etc. However, this may be detrimental to science and teaching if done against the wish of the large majority or the totality of both old and younger research staff of the Department of Mineralogy and Petrology.

Further comments and recommendation are given at the end of this report.

ASSESSMENT OF INDIVIDUAL PROGRAMS

2.1. - 2.2. PROGRAMS 1 and 2: Crystallography and Crystal Chemistry of Rock Minerals, coordinator Dal Negro

Programs #1 and #2 are very similar from methodological point of view, objectives and staff. Program #2 has been more recently established than Program #1, and, therefore, has a lower productivity. The two programs will be assessed together.

Quality

Originality of approach: Excellent - The school of crystallographers at Padova has a strong tradition in the application of crystal-structural methods, especially pyroxenes and spinels, to mineralogical and petrological problems contributing significantly to advancement in mineralogy and in igneous and metamorphic petrology.

Program coherence: Very Good – Logical development from static to dynamic aspects, in recent years transfer of expertise and concept from one mineral group to another.

National and international reputation of researchers

Very good to Excellent both at international and national level for three P.O.'s (Dal Negro, Della Giusta and Molin).

Product quality

Very good, although participations in meetings could be much increased.

Quality of any other activities

Good. G. Molin is well-integrated into the organization of national and international schools, and science committees.

Productivity (ratio between number of products and number of researchers):

Very good for Program #1. Good for Program # 2.

Relevance:

Excellent for the disciplines of Mineralogy and Petrology.

Future possibilities:

Very good, but, unless something is done about the replacement of the retired or retiring research staff, future possibilities for mineralogy programs are gloomy. For future developments, research activity should be expanded to applied disciplines such as materials science and focus on industrial material, in addition to rock-forming minerals. The use of the Synchrotron facilities at ESRF and Trieste is highly encouraged for future research.

OVERALL SCORE FOR PROGRAMS 1 AND 2: VERY GOOD

2.3. PROGRAM 3: Features of phyllosilicate as a function of crystallization conditions. Coordination R. Sassi

Quality

Originality of approach: Very good to Excellent. This program has been established since a long time by the Sassi-Guidotti team, but it is still expanding by investigating complex polymetamorphic situations and more metamorphic minerals and approaching further methodological development.

Program coherence: Very good – The main research stream consists in the use of the crystal chemistry of one mineral family to solve a wide variety of petrological problems.

National and international reputation of researchers

Excellent for the PO. The PA reputation is good to very good.

Product quality

Very good. The organisation of an international conference and the publications of a volume in the prestigious series “Reviews in Mineralogy and Geochemistry”, of which a member of the DMP is Co-Editor, have to be mentioned.

Quality of any other activities

Excellent, particularly for F.P. Sassi.

Productivity (ratio between number of products and number of researchers):

Very Good

Relevance (disciplinary and social)

Very good for a wide range of geoscience disciplines.

Future possibilities:

Very good. The flexibility of the program, its innovation and the relations with other geoscience disciplines make future possibilities of this program still very interesting. Participation of PhD students in this program seems limited and its increase would be beneficial to the program. Also international collaboration could be increased. The number of staff involved in the program is rather low and needs increasing.

OVERALL SCORE FOR PROGRAM 3: VERY GOOD

2.4. PROGRAM 4: Age, origin, geodynamic context and climatic effects of magmatism. Coordinator G. Bellieni

Quality

Originality of approach: Good - The “Large Igneous Provinces” are one of the main most appealing research topics in igneous petrology, because of its implications in other disciplines such as geodynamics, Earth evolution history, climatic changes and mass extinction. However, originality is difficult to establish, given the very wide range of possible approaches.

Program coherence: Good. Again, the number of possible approaches is very high.

National and international reputation of researchers

Good

Product quality

Good to very good

Quality of any other activities

Very Good. Nothing is listed in the self-evaluation report. This, however, is an omission, since Bellieni is Department Head and has been coordinator of the Padova CNR-IGG section. Bellieni is also involved in the activity of the Subcommission of IUGS for nomenclature of magmatic and metamorphic rocks

Productivity (ratio between number of products and number of researchers):

Good. It is noted that most papers have large number of authors, most of whom are coming from other institution than the DMP.

Relevance (disciplinary and social)

Very good. The implications for several disciplines both within and outside Earth sciences are very relevant. Social impact of research on a

process that has effects on climatic changes and mass extinction is again very high.

Future possibilities

Very good. This program has enormous possibilities of further developments, providing that additional funding is raised and other research staff joins the group. Better focus should be placed on trace element and isotope geochemistry of LPS, which at the moment is not highly developed in this program. The Padovan group, though small, is going to have a leading role in this project in the future, but need to increase the number of staff participating in this research.

OVERALL SCORE FOR PROGRAM 4: GOOD TO VERY GOOD

2.5 PROGRAM 5: Processes and mechanisms in metamorphism. Coordinator B. Cesare

Quality

Originality of approach: Very good. Themes and use of mineralogical, geochemical and microstructural techniques (PIXE, TEM, SEM techniques etc.) in the characterisation of metamorphic rocks are highly original and innovative.

Program coherence: Very good

National and international reputation of researchers

Very good.

Product quality

Excellent

Quality of any other activities

Excellent for F.P. Sassi. Very good also for Cesare and Spiess

Productivity (ratio between number of products and number of researchers)

Very good

Relevance (disciplinary and social):

Very good disciplinary relevance for metamorphic and igneous petrology and for geodynamics.

Future possibilities

Excellent, considering the potentiality of scientific themes, and the high quality, young age and strong activity of researches involved in the

program. A better coordination with programs #1 and #2 is highly recommended.

OVERALL SCORE FOR PROGRAM 5: VERY GOOD TO EXCELLENT

2.6. PROGRAM 6: Study of crystalline areas. Coordinator R. Spiess

Quality

Originality of approach: Satisfactory. This program addresses a large number of different projects, both in igneous and metamorphic petrology. The originality will eventually come once the projects will be developed and the interest of this program is especially the one of providing topics to other programs, especially #3, 4, 5.

Program coherence: Unsatisfactory. Very heterogeneous combination of different programs.

National and international reputation of researchers

Highly variable, from excellent to low

Product quality

Very variable, with some themes without any publication.

Quality of any other activity

Very good for F.P. Sassi, B. Cesare, R. Spiess, R. Sassi.

Productivity (ratio between number of products and number of researchers)

Good

Relevance (disciplinary and social)

Good. The program provides basic information on geological evolution of key areas, such as the Alps.

Future possibilities

Very good for the large number of possible themes to be developed. Additional international collaboration is suggested.

OVERALL SCORE FOR PROGRAM 6: GOOD

2.7. PROGRAM 7: Mineralogy, petrography and geochemistry applied to study of cultural heritage. Coordinator G. Molin

Quality

Originality of approach: Good. The approach is not completely new, but has the strong merit to connect science with humanities.

Program coherence: High, for objectives and methodological approaches.

National and international reputation of researchers

Very good for M. Molin.

Product quality

Good

Quality of any other activities

Very good for M. Molin

Productivity

Good. Note this is a “young” project that cannot be directly compared with the other well established programs. Its productivity should improve with time.

Relevance (disciplinary and social)

Very good. The program is highly relevant because of the connection of to earth sciences and human sciences.

Future possibilities

Very good. This is a main opportunity for applied mineralogy and petrology research, especially in a country with huge problems of cultural heritage conservation, like Italy. Although mineralogy and geochemistry will have a leading role in the program, it should also involve other disciplines of geological sciences.

OVERALL SCORE FOR PROGRAM 7: GOOD TO VERY GOOD

2.8. PROGRAM 8: Mineralogy, Petrography and Geochemistry applied to study and mining of metalliferous and industrial minerals and study of environmental impact. Coordinator P. Frizzo

Quality

Originality of approach: Fair. Approach is rather standard and the program is strongly heterogeneous.

Program coherence: Low. This is a very heterogeneous program, in terms of scientific fields, study subjects, etc.

National and international reputation of researchers

Highly variable. Excellent for Nimis.

Product quality

Fair

Quality of any other activities

Low

Productivity

Good from a quantitative point of view and considering the low amounts of funds for this program.

Relevance (disciplinary and social)

High. This is a program very useful for industry and local governments. Its social relevance is potentially high for several themes, such as geological mapping.

Future possibilities

Good. However, funding should be pursued more energetically. The field is very much useful for job opportunities for students. Publications on international journals are recommended.

OVERALL SCORE FOR PROGRAM 8: SATISFACTORY

2.9 PROGRAM 9: History of mantle rocks in various geodynamic contexts.

Coordinator P. Nimis

Quality

Originality of approach: Very good. The program is a well-focussed on ultramafic rocks and uses both standard and advanced technologies, involving experimental mineralogy, thermodynamics, geodynamics etc.

Program coherence: Very high.

National and international reputation of researchers

Good to very good. P. Nimis seems to be gaining a high international reputation.

Product quality

Very good.

Quality of any other activities

Poor. No other activities mentioned in the report

Productivity (ratio between number of products and number of researchers)

Excellent. This results from the small size of the group and the good to very good scientific production.

Relevance (disciplinary and social):

Very high disciplinary relevance for mineralogy and petrology.

Future possibilities

Very good, but the program coordinator should much closer focus on this program, given the scarcity of participating staff.

OVERALL SCORE FOR PROGRAM 9: VERY GOOD

3. OVERALL EVALUATION OF DEPARTMENT RESEARCH

In summary the Dipartimento di Mineralogia e Petrologia of Padova University appears in a healthy state for research, for number and quality of research output and for capacity of attracting funds, at least in the national context. However, there is still ample space for improvements. Some of the programs are of high level, other are not, but on average the standard of the Department is excellent at the National level and good at the international level.

4. CONCLUSIONS AND RECOMMENDATIONS

- keep the research activity at its present level, possibly giving up to some of the themes, in order to better focus on major topics. The division of the DMP research into nine programs may be excessive, given the shortage of personnel and staff time. Some programs actually working on closely related topics (e.g. program 1+2; program 3+5+6) should be merged to larger units.
- increase international visibility and cooperation. Improve the funding situation by participating in e. g. EC programs.
- expand international projection of doctoral student, by encouraging them to go abroad and to present the results of their research to international meetings. Qualified students finishing their theses at the department should be encouraged to go abroad on postdoc positions. There is also a need for weekly internal seminars to improve communication and discussion.

- attract more temporary senior scientists from abroad.
- increase the visibility of the younger researchers at national and international level by encouraging them to publish in international journals, organize national and international meetings and work-shops. They should follow the tradition of the Department which provided important support for international meetings and journal editorships in the past.
- intensify public relations on a local level.
- continue to develop close linkage between teaching and research and trying to attract international doctoral students (e. g. by establishing a Marie-Curie Training site).
- if the new Geology department has to be established, then the staff should do their best to strengthen ties and develop synergies with geologists at Padova University.
- research staff is decreasing and the University should promote hiring new professors and researchers.
- there is need to be more innovative in use of techniques in studying rocks and minerals. For instance, no one is taking full advantage of the facilities at Trieste and ESRF.
- decrease the amount of time that the scientific staff needs to spend on administrative work and related issues to increase scientific productivity.
- more office space should be given to graduate students and their working conditions improved; they should also be encouraged to use experimental facilities in other national and international laboratories. Funds should be provided for their attendance at international meetings and workshops.

FACULTY STAFF**DEPT.OF MINERALOGY AND PETROLOG****YEAR 2003 NOTES**Full Professor "Professori Ordinari": P.O.

- 1 A. DAL NEGRO
- 2 A. DELLA GIUSTA
- 3 E. JUSTIN
- 4 P. OMENETTO Retired 01/01/2004
- 5 F. SASSI
- 6 G. BELLINI
- 7 G. MOLIN

Associate Professor "Professori associati": P.A.

- 1 S. CARBONIN
- 2 B. CESARE
- 3 P. FRIZZO
- 4 C. MAZZOLI
- 5 G. SALVIULO
- 6 R. SPIESS
- 7 D. VISONA'

Assistant Professor "Ricercatori": R.U.

- 1 A. MARZOLI
- 2 P. NIMIS
- 3 R. SASSI
- 4 L. SECCO

TOTALE P.O. + P.A. + R.U. =18**DEPT. OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS****YEAR 2003 NOTES**Full Professor "Professori Ordinari": P.O.

- 1 G. DAL PIAZ
- 2 A. DAL PRA'
- 3 V. DE ZANCHE Since nov. 2003
- 4 I. DIENI
- 5 R. GENEVOIS
- 6 F. MASSARI
- 7 G.B. PELLEGRINI
- 8 D. RIO

Associate Professor "Professori associati": P.A.

- 1 R. ANTONELLI
- 2 G. BARBIERI Retired 01/10/2003
- 3 A. CAPORALI
- 4 E. FORNACIARI
- 5 P. GRANDESSO
- 6 V. ILICETO
- 7 P. MIETTO
- 8 G. PENNACCHIONI
- 9 R. SEDEA

Assistant

- 1 G. FORTELEONI

Assistant Professor "Ricercatori": R.U.

- 1 P. FABBRI
- 2 E. FINZI
- 3 A. GALGARO
- 4 R. GATTO
- 5 M. MASSIRONI
- 6 D. MELLERE Left 10/02/03
- 7 C. STEFANI
- 8 A. ZAJA
- 9 D. ZAMPIERI

TOTALE P.O.+ P.A.+ AS. + R.U. =27

DEPT.OF MINERALOGY AND PETROLOG**YEAR 2004 NOTES**Full Professor

- 1 G. BELLINI
- 2 A. DAL NEGRO
- 3 A. DELLA GIUSTA Retired 1/10/2004
- 4 E. JUSTIN Retired 1/10/2004
- 5 F. SASSI
- 6 G. MOLIN

Associate Professor

- 1 S. CARBONIN
- 2 B. CESARE
- 3 P. FRIZZO
- 4 C. MAZZOLI
- 5 G. SALVIULO
- 6 R. SPIESS
- 7 D. VISONA'

Assistant Professor

- 1 A. MARZOLI
- 2 P. NIMIS
- 3 R. SASSI
- 4 L. SECCO

TOTALE P.O. + P.A + R.U. =17**DEPT. OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS****YEAR 2004 NOTES**Full Professors

- 1 G. DAL PIAZ
- 2 A. DAL PRA'
- 3 V. DE ZANCHE
- 4 I. DIENI
- 5 R. GENEVOIS
- 6 F. MASSARI
- 7 G.B. PELLEGRINI
- 8 D. RIO

Associate Professor

- 1 R. ANTONELLI
- 2 A. CAPORALI
- 3 E. FORNACIARI
- 4 P. GRANDESSO
- 5 V. ILICETO
- 6 P. MIETTO
- 7 G. PENNACCHIONI
- 8 R. SEDEA
- 9 C. STEFANI
- 10 D. ZAMPIERI

Assistant

- 1 G. FORTELEONI

Assistant Professor

- 1 P. FABBRI
- 2 E. FINZI
- 3 A. GALGARO
- 4 R. GATTO
- 5 M. MASSIRONI
- 6 A. ZAJA

TOTALE P.O.+ P.A.+ AS. + R.U. = 25

DEPT.OF MINERALOGY AND PETROLOG**YEAR 2005****NOTES**Full Professor

- 1 G. BELLINI
 - 2 A. DAL NEGRO
 - 3 G. MOLIN
 - 4 F.P. SASSI
- Since nov. 2005

Associate Professor

- 1 S. CARBONIN
- 2 B. CESARE
- 3 P. FRIZZO
- 4 C. MAZZOLI
- 5 G. SALVIULO
- 6 R. SPIES
- 7 D. VISONA'

Assistant Professor

- 1 A. MARZOLI
- 2 P. NIMIS
- 3 R. SASSI
- 4 L. SECCO

TOTALE P.O. + P.A. + R.U. =15**DEPT. OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS****YEAR 2005****NOTES**Full Professor

- 1 G. DAL PIAZ
- 2 V. DE ZANCHE
- 3 I. DIENI
- 4 R. GENEVOIS
- 5 F. MASSARI
- 6 G.B. PELLEGRINI
- 7 D. RIO

Associate Professor

- 1 R. ANTONELLI
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- 4 P. GRANDESSO
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- 6 P. MIETTO
- 7 G. PENNACCHIONI
- 8 R. SEDEA
- 9 C. STEFANI
- 10 D. ZAMPIERI

Assistant Professor

- 1 L. CAPRARO
- 2 P. FABBRI
- 3 E. FINZI
- 4 A. GALGARO
- 5 R. GATTO
- 6 M. MASSIRONI
- 7 N. PRETO
- 8 A. ZAJA

TOTALE P.O. + P.A. + R.U. =25

DEPT.OF MINERALOGY AND PETROLOG**YEAR 2006****NOTES**Full Professor

- 1 G. BELLINI
- 2 A. DAL NEGRO
- 3 G. MOLIN
- 4 F.P. SASSI

Associate Professor

- 1 S. CARBONIN
- 2 B. CESARE
- 3 P. FRIZZO
- 4 A. MARZOLI Since 01/03/2006
- 5 C. MAZZOLI
- 6 P. NIMIS Since 01/12/2006
- 7 G. SALVIULO
- 8 R. SASSI Since 01/03/2006
- 9 L. SECCO Since 01/03/2006
- 10 R. SPIESS
- 11 D. VISONA'

Assistant Professor

- 1 A. MARZOLI Until 28/02/2006
- 2 F. NESTOLA Since 01/05/2006
- 3 P. NIMIS Until 30/11/2006
- 4 R. SASSI Until 28/02/2006
- 5 L. SECCO Until 28/02/2006

TOTALE P.O. + P.A. + R.U. = 20**DEPT. OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS****YEAR 2006****NOTES**Full Professor

- 1 G. DAL PIAZ
- 2 V. DA ZANCHE
- 3 I. DIENI
- 4 R. GENEVOIS
- 5 F. MASSARI
- 6 G.B. PELLEGRINI Retired 01/05/2006
- 7 D. RIO

Associate Professor

- 1 R. ANTONELLI
- 2 A. CAPORALI
- 3 G. CASSIANI Since 01/10/2006
- 4 P. FABBRI Since 01/12/2006
- 5 E. FORNACIARI
- 6 P. GRANDESSO
- 7 V. ILICETO
- 8 P. MIETTO
- 9 S. MONARI Since 01/10/2006
- 10 G. PENNACCHIONI
- 11 P. SCOTTON
- 12 R. SEDEA
- 13 C. STEFANI
- 14 D. ZAMPIERI

Assistant Professor

- 1 L. CAPRARO
- 2 G. DI TORO
- 3 P. FABBRI
- 4 E. FINZI
- 5 A. GALGARO
- 6 R. GATTO
- 7 M. MASSIRONI
- 8 N. PRETO
- 9 A. ZAJA

TOTALE P.O. + P.A. + R.U. = 30

DEPT. OF GEOSCIENCES**YEAR 2007****NOTES**Full Professor

- | | |
|----------------|--------------------|
| 1 G. ARTIOLI | |
| 2 G. BELLINI | |
| 3 A. DAL NEGRO | |
| 4 G. DAL PIAZ | Retired 01/10/2007 |
| 5 V. DA ZANCHE | Died 24/05/2007 |
| 6 I. DIENI | Retired 01/10/2007 |
| 7 R. GENEVOIS | |
| 8 F. MASSARI | |
| 9 G. MOLIN | |
| 10 D. RIO | |
| 11 F.P. SASSI | Retired 01/11/2007 |

Associate Professor

- | | |
|--------------------|--------------------|
| 1 R. ANTONELLI | |
| 2 A. CAPORALI | |
| 3 S. CARBONIN | |
| 4 G. CASSIANI | |
| 5 B. CESARE | |
| 6 P. FABBRI | |
| 7 E. FORNACIARI | |
| 8 P. GRANDESSO | |
| 9 V. ILICETO | Retired 01/10/2007 |
| 10 A. MARZOLI | |
| 11 C. MAZZOLI | |
| 12 P. MIETTO | |
| 13 S. MONARI | |
| 14 P. NIMIS | |
| 15 G. PENNACCHIONI | |
| 16 G. SALVIULO | |
| 17 R. SASSI | |
| 18 P. SCOTTON | |
| 19 L. SECCO | |
| 20 R. SEDEA | |
| 21 R. SPIESS | |
| 22 C. STEFANI | |
| 23 D. VISONA' | |
| 24 A. ZAJA | |

25 D. ZAMPIERI

Assistant Professor

1 L. CAPRARO	
2 R. DEIANA	Since 01/10/2007
3 G. DI TORO	
4 E. FINZI	
5 M. FLORIS	Since 01/10/2007
6 A. GALGARO	
7 R. GATTO	
8 M. GHINASSI	Since 01/10/2007
9 L. GIUSBERTI	
10 L. MARITAN	Since 01/10/2007
11 M. MASSIRONI	
12 F. NESTOLA	
13 N. PRETO	

TOTAL P.O. + P.A. + R.U. = **49**

LIST OF PhD STUDENTS

Family name	First name	PhD Cycle	Years	Tutor	Thesis' title
Sharif	Khalifa Oman	17	2003/2005	A. Caporali	SISMOLOGIA E APPLICAZIONE DELLA LIBIA
Bucchieri	Giuseppe	18	2003/2005	G.Molin – G. Salviulo	CARATTERIZZAZIONE ARCHEOMETRICA E VALUTAZIONE DEL DEGRADO DEI REPERTI CERAMICI ANTICHI
Cester	Tatiana	18	2003/2005	R. Sassi	VARIAZIONI DEL CHIMISMO DI MINERALI, CON PARTICOLARE RIGUARDO ALLE MICHE, CON LE CONDIZIONI P-T DEL METAMORFISMO IN UNA ZONEOGRAFIA TIPICA IL METAMORFISMO DI BOSOST (PIRENEI ORIENTALI)
Menegon	Luca	18	2003/2005	G. Pennacchioni	MECCANISMI DI LOCALIZZAZIONE DELLO STRAIN IN ZONE DI SHEAR DUTTILE
Nalin	Ronald	18	2003/2005	F. Massari	SEDIMENTAZIONE DI CARBONATI NON TROPICALI; STRATIGRAFIA E SEDIMENTAZIONE DI DEPOSITI COSTIERI NEL BACINO DI CROTONE
Piubelli	Daniele	18	2003/2005	P. Mietto	STUDIO DI IMPRONTE DI TETRAPODI DEL TRIAS SUP. – GIURASSICO INF.
Rigo	Manuel	18	2003/2005	P. Mietto	BIOSTRATIGRAFIA A CONODONTI DEL TRIASSICO SUPERIORE
Rocca	Michele	18	2003/2005	R. Genevois	REALIZZAZIONE DI UN DATABASE E DI RELATIVA CARTOGRAFIA TEMATICA SULLE FRANE DEI COLLI EUGANEI, CON UNA PRIMA STIMA DEL RISCHIO IDROGEOLOGICO NELL'AREA DEL PARCO DEI COLLI EUGANEI
Zaghis	Federico	18	2003/2005	G. Molin	STUDIO ARCHEOMETRICO DI MATERIALI METALLICI: MATERIE PRIME, MANUFATTI E PRODOTTI DI ALTERAZIONE
Agnini	Claudia	19	2004/2006	E. Fornaciari	BIOCRONOLOGIA E SIGNIFICATO PALEOCLIMATICO DEI NANNOFOSSILI CALCAREI DELL'Eocene INFERIORE E MEDIO (VENETO ORIENTALE E LEG 208 ODP)
Armento	Maria Concetta	19	2004/2006	R. Genevois	HEAVY RAINFALL TRIGGERING MECHANISM OF SHALLOW LANDSLIDES

Cuman	Andrea	19	2004/2006	R. Genevois	FRANE CATASTROFICHE: ANALISI DEI MECCANISMI DI INNESCO E DELL'EVOLUZIONE DI GRANDI FRANE UTILIZZANDO METODI DI PROSPEZIONE GEOFISICA, ANALISI DI IMMAGINI SATELLITARI E MODELLI NUMERICI
Deganutti	Andrea Maria	19	2004/2006	R. Genevois	REOLOGIA E DINAMICHE DI FLUSSO E DI DEPOSIZIONE DELLE FRANE RAPIDE (ROCK AVALANCHE)
Dibona	Raffaella	19	2004/2006	R. Spiess	MECCANISMI DI DEFORMAZIONE DEL PLAGIOCASIO AD ALTA TEMPERATURA: CONFRONTO TRA CAMPIONI SPERIMENTALI E NATURALI
Liziero	Federica	19	2004/2006	S. Carbonin	STUDIO CRISTALLOCHIMICO DI SILICATI E OSSIDI CON DIFETTUALITÀ NATURALI E INDOTTE SPERIMENTALMENTE
Meneguolo	Renata	19	2004/2006	V. De Zanche	RITIRATA / ISCRITTA AL XX° CICLO
Monegato	Giovanni	19	2004/2006	F. Massari - Stefani	THE CONTINENTAL CONGLOMERATE SUCCESSIONS OF TAGLIAMENTO VALLEY MONITORAGGIO DA TERRA DI FENOMENI DI INSTABILITÀ GEOLOGICA AD ALTO RISCHIO E DI GRANDI OPERE STRUTTURALI: INTEGRAZIONE DI SISTEMI DI TELERILEVAMENTO A MICROONDE ED OTTICI
Teza	Giordano	19	2004/2006	A. Galgaro	PROSPEZIONI GEOFISICHE AL ALTA RISOLUZIONE IN CAMPO AMBIENTALE
Vettore	Luciana	19	2004/2006	E. Finzi	MICROSTRUTTURE DI AGGREGATI DI GRANATO: COLLEGAMENTI TRA I MECCANISMI DI FORMAZIONE E I CONTESTI GEODINAMICI DI FORMAZIONE
Bavila	Marida	20	2005/2007	R. Spiess	APPLICAZIONE INTEGRATA DI TECNICHE DIAGNOSTICHE SU LITOTIPI DI RILEVANZA STORICO-ARTISTICA E MONUMENTALE.
Benchiarin	Simone	20	2005/2007	G. Molin	STUDIO DEI PROCESSI DI DEGRADO, ANALISI DEGLI INTERVENTI DI RESTAURO E CARATTERIZZAZIONE DEI LITOTIPI DI CAVA FINALIZZATA ALLA SOSTITUZIONE CONSERVATIVA.
Boaga	Jacopo	20	2005/2007	V. Iliceto	SYNTETIC SEISM AND NON-LINEAR INVERSIONS AS TOOLS FOR THE SOIL TREMOR SCENARIOS.
Meneguolo	Renara	20	2005/2007	V. De Zanche - C. Stefani	STUDIO STRATIGRAFICO E COMPOSIZIONALE DELLE UNITÀ MISTE TERRIGENO-CARBONATICHE, DI BASSA PROFONDITÀ, DEL CARNICO (TRIASSICO SUPERIORE) DI DOLOMITI E ALPI GIULIE

Pittarello	Lidia	20	2005/2007	G. Pennacchioni	STUDY OF EXHUMED PALEO-SEIMIC FAULTS AS A GAUGE TO ESTIMATE EARTHQUAKE SOURCE PARAMETERS
Belvedere	Matteo	21	2006/2008	P. Mietto	ICHTHOLOGICAL STUDIES OF THE DINOSAUR FOOTPRINTS FROM THE JURASSIC IOUARIDÈNE FORMATION (DEMNAT, CENTRAL HIGH-ATLAS, MAROCCO)
Cuppone	Tiberio	21	2006/2008	A. Marzoli	TIME RELATED EVOLUTION OF CONTINENTAL FLOOD BASALT PROVINCE. GEOCHEMISTRY AND MAGNETO-STRATIGRAPHY OF CAMP LAVA FLOW SEQUENCES FROM THE HIGH ATLAS, MAROCCO.
Franceschi	Marco	21	2006/2008	N. Preto	APPLICATION OF LIDAR TECHNOLOGY TO CYCLOSTRATIGRAPHY
Garbin	Marco	21	2006/2008	A. Zaja	SISMICITÀ INDOTTA DA BACINI IDRICI ARTIFICIALI: MONITORAGGIO ED ANALISI DEI DATI
Giannetta	Mirko	21	2006/2008	C. Mazzoli	ARCHAEOMETRICAL STUDY OF POTTERY FROM TAYMA (SAUDI ARABIA)
Giardino	Daniele	21	2006/2008	C. Mazzoli	STUDIO GEOCHIMICO ED ISOTOPICO DI BIOINDICATORI MARINI IN SITI ARCHEOLOGICI: UN NUOVO STRUMENTO PER LA RICOSTRUZIONE DELLA VARIABILITÀ CLIMATICA NATURALE E DELL'EFFETTO ANTROPICO NEL BACINO DEL MAR MEDITERRANEO.
Guaiumi	Chiara	21	2006/2008	N. Preto	UPPER TRIASSIC HEMIPELAGIC CARBONATES: CONTINUITY OF BEDS, PROVENANCE AND COMPOSITION OF THE MICRITE (LAGONEGRO AND SICANI BASINS)
Moro	Francesca	21	2006/2008	R. Genevois	I FENOMENI VALANGHIVI: INSTABILITÀ, DINAMICA ED OPERE DI DIFESA
Piovesan	Rebecca	21	2006/2008	C. Mazzoli	ARCHAEOMETRICAL INVESTIGATIONS ON PLASTERS, PAINTINGS AND FLOORS AT POMPEI: FUNCTIONAL CHARACTERISATION AND IMPLICATIONS FOR A NEW BUILDING CHRONOLOGY
Cultrera	Matteo	22	2007/2009	R. Antonelli	GROUNDWATER IMPACTS FROM CIVIL ENGINEERING WORKS
Dalla Nave	Edoardo	22	2007/2009	D. Rio	CRONOLOGIA DEL PALEOGENE INFERIORE DELLE ALPI VENETE: MAGNETOSTRATIGRAFIA INTEGRATE CON BIOSTRATIGRAFIA, CHEMOSTRATIGRAFIA E CICLOSTRATIGRAFIA.

Ferrero	Silvio	22	2007/2009	B. Cesare	STUDIO PETROLOGICO DELLE INTERAZIONI FLUIDO-FUSO-ROCCIA DURANTE L'ANATESSI CROSTALE DI METAPELITI GRAFITICHE: APPLICAZIONE COMPARATA A XENOLITI SPAGNOLI DELLA NEOGENE VOLCANIC PROVINCE E GRANULITI INDIANE DELLA KERALA KHONDALITE BELT
Giacomini	Lorenza	22	2007/2009	M. Massironi	FORME VULCANICHE E TETTONICHE SU LUNA E MERCURIO: CONFRONTO CON ANALOGHI DI PIANETI TERRESTRI E RENDERING 3D
Santello	Lisa	22	2007/2009	P. Mietto	STRATIGRAPHIC FEATURES OF ROCCAMONFINA VOLCANO (CASERTA SOUTHERN ITALY), RELATED TO THE PRESENCE OF PLEISTOCENE HUMAN FOOTPRINTS
Sanvitale	Nicoletta	22	2007/2009	R. Genevois	UNO STUDIO SUI MECCANISMI DI INNESCO E DI FLUSSO DI COLATE DETRITICHE RAPIDE

**LIST OF POSTGRADUATE GRANTS - UNIVERSITY PhD POST-DOC GRANTS –OTHER
UNIVERSITY POST-DOC GRANTS 2003-2007**

YEAR	POST GRADUATE GRANTS	UNIVERSITY PhD POST-DOC GRANTS	OTHER UNIVERSITY PhD POST-DOC GRANTS	NOTES
2003 D.M.P	Busa' Tiziana Carraro Anna Lavina Barbara Martignago Fedora Zanco Angela	Carraro Anna Lavina Barbara Maritan Lara Moretti Alessandro	Coccia Barbara	
2003 D.G.P.G.	Preto Nereo	Breda Anna Di Toro Giulio Giusberti Luca	Armento M. Concetta Bistacchi Nicola Coccia Barbara Cuman Andrea De Giusti Fabio Facchinetti Claudia Teza Giordano Vettore Luciana	
2004 D.M.P	Busa' Tiziana Carraro Anna Ferri Fabio Lavina Barbara Martignago Fedora	Beccaro Livia Maritan Lara Silvestri Alberta	Bavila Marida	
2004 D.G.P.G	Giusberti Luca Preto Nereo	Breda Anna Di Toro Giulio Giusberti Luca Squarzonei Cristina	Bistacchi Nicola Cuman Andrea Facchinetti Claudia Teza Giordano	
2005 D.M.P	Carraro Anna Ferri Fabio Lavina Barbara Maritan Lara Martignago Fedora	Silvestri Alberta	Chiarantini Laura	
2005 D.G.P.G	Dalla Torre Andrea Di Toro Giulio Giusberti Luca Preto Nereo	Breda Anna Breda Marzia Consolaro Chiara Di Toro Giulio Fellin Maria Giuditta Giusberti Luca Squarzonei Cristina	Cuman Andrea Facchinetti Claudia Teza Giordano	
2006 D.M.P	Carraro Anna Ferri Fabio Lavina Barbara Maritan Lara Martignago Fedora Merle Renaud Silvestri Alberta		Chiarantini Laura	
2006 D.G.P.G	Dalla Torre Andrea Giusbeerti Luca Rigo Manuel	Breda Anna Breda Marzia Consolaro Chiara Fellin Maria Giuditta Squarzonei Cristina	Cuman Andrea Teza Giordano	
2007 D.G. 2007 D.G.	Agnini Claudia Breda Anna Carraro Anna Dalla Torre Andrea Ferri Fabio Ghinassi Massimiliano Lavina Barbara Maritan Lara Merle Renaud Rigo Manuel Silvestri Alberta Squarzonei Cristina Tajcmanova Lucie	Breda Marzia Consolaro Chiara	Di Bona Raffaella Gradizzi Annapaola Lorenzetti Giuliano Masiero Elena Menegon Luca Morini Carlotta Pepi Tommaso Rosignoli Alessia Soldà Enrico Tellini Fabrizio	RETIRED 01/11/2007 RETIRED 15/10/2007 UNTIL 01/10/2008

TECNHICAL AND ADMINISTRATIVE STAFF

DIP.OF MINERALOGY AND PETROLOGY

YEAR 2003	NOTES
1 BASTIANELLI	
2 BATTOCCHIO	
3 BROGIATO	
4 CIERVO	Part time
5 DE TOMI	
6 FIOROTTO	
7 GABRIOTTI	
8 MAGRO	
9 PASQUAL	
10 PIAI	
11 RACCAGNI	
12 TAURO	
13 ZECCHIN	Until 04-07-2003
14 ZORZI	Part time

DIP. OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS

YEAR 2003	NOTES
1 BOESSO	
2 CARRARO	
3 CASTELLI	
4 DANIELETTO	
5 FACCIOLI	
6 FASSARI	
7 FRANCESCHIN	
8 GARDELLIN	
9 GIRARDI	
10 MASTRANGELO	
11 MICHELON	
12 MINOTTO	
13 MOJALE	
14 NORDIO	
15 NOVELLO	
16 PALLARO	
17 PELOI	
18 PRATICELLI	
19 STORTI	Since 03-02-2003
20 TONELLO	

DIP.OF MINERALOGY AND PETROLOGY

YEAR 2004	NOTES
1 BASTIANELLI	
2 BATTOCCHIO	Leave on 17-05-2004
2 BOESSO	Leave on 01-08-2004- sost. BATTOCCHIO R.
3 BROGIATO	Retired 01-10-2004
4 CIERVO	Part time
5 DE FALCO	Hired 14-04-2004- Part Time
6 DE TOMI	
7 FIOROTTO	
8 GABRIOTTI	
9 MAGRO	
10 PASQUAL	
11 PIAI	
12 RACCAGNI	
13 TAURO	
14 ZORZI	Part time

DIP. OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS

YEAR 2004	NOTES
1 BOESSO	
2 CARRARO	Leave on 1-12/2004
3 CASTELLI	
4 DANIELETTO	
5 FACCIOI	
6 FASSARI	
7 FRANCESCHIN	
8 GARDELLIN	
9 GIRARDI	
10 MALATESTA	Hired 28-10-2004
11 MASTRANGELO	
12 MICHELON	
13 MINOTTO	
14 MOJALE	
15 NORDIO	
16 NOVELLO	
17 PELOI	
18 PALLARO	
19 PRATICELLI	
20 STORTI	
21 TONELLO	

DIP.OF MINERALOGY AND PETROLOGY**YEAR 2005**

- 1 BASTIANELLI
- 2 BOESSO
- 2 CIERVO
- 3 DE FALCO
- 4 DE TOMI
- 5 FIOROTTO
- 6 GABRIOTTI
- 7 MAGRO
- 8 PASQUAL
- 9 PIAI
- 10 RACCAGNI
- 11 TAURO
- 12 ZORZI

DIP. OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS**YEAR 2005 NOTES**

- 1 BOESSO
- 2 CASTELLI
- 3 DAL POZZOLO Hired 05-04-2005
- 4 DANIELETTO
- 5 FACCIOLI
- 6 FASSARI
- 7 FRANCESCHIN
- 8 GARDELLIN Retired 02/ 2005
- 9 GIRARDI
- 10 MALATESTA
- 11 MASTRANGELO
- 12 MICHELON
- 13 MINOTTO
- 14 MOJALE
- 15 NORDIO
- 16 NOVELLO
- 17 PELOI
- 18 PALLARO
- 19 PRATICELLI
- 20 STORTI Until 3-02-2005
- 21 TONELLO

DIP.OF MINERALOGY AND PETROLOGY**YEAR 2006**

- 1 BASTIANELLI
- 2 BOESSO
- 2 CIERVO
- 3 DE FALCO
- 4 DE TOMI
- 5 FIOROTTO
- 6 GABRIOTTI
- 7 MAGRO
- 8 PASQUAL
- 9 PIAI
- 10 RACCAGNI
- 11 TAURO
- 12 ZORZI

DIP. OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS**YEAR 2006 NOTES**

- 1 BOESSO
- 2 BORTOLINI Hired 11/ 2006
- 3 CASTELLI
- 4 DAL POZZOLO Until 06-11-2006
- 5 DANIELETTO
- 6 FACCIOLI
- 7 FASSARI
- 8 FRANCESCHIN
- 9 GIRARDI
- 10 MALATESTA
- 11 MASTRANGELO
- 12 MICHELON
- 13 MINOTTO
- 14 MOJALE
- 15 NORDIO
- 16 NOVELLO
- 17 PELOI
- 18 PERISSINOTTO Hired 01-02-2006
- 19 PALLARO
- 20 PRATICELLI Until 08-03-2006
- 21 RASSU Hired 20-12-2006
- 22 TONELLO
- 23 VETTORE Hired 13-03-2006

DIP. OF GEOSCIENCES NOTES**YEAR 2007**

1 BASTIANELLI	
2 BOESSO SANDRA	
3 BOESSO SERENELLA	
4 BORTOLINI	
5 BOZZOLAN	Temporary 17-09-2007 /16-11-2007
6 CASTELLI	
7 CIERVO	
8 DANIELETTO	
9 DE FALCO	
10 DE TOMI	
11 FACCIOI	
12 FASSARI	
13 FIOROTTO	
14 FRANCESCHIN	
15 GABRIOTTI	
16 GASPARATO	Hired 26-11-2007
17 GIRARDI	
18 MAGRO	
19 MASIERO	Hired 03-09-2007
20 MASTRANGELO	
21 MICHELON	
22 MINOTTO	
23 MOJALE	Leave
24 NORDIO	
25 NOVELLO	Retired 10/ 2007
26 PASQUAL	
27 PELOI	
28 PERISSINOTTO	
29 PIAI	Leave on 04/ 2007
30 PRATICELLI	
31 RACCAGNI	
32 RASSU	
33 TAURO	
34 TONELLO	
35 VETTORE	
36 ZORZI	

FINANCIAL RESOURCES OF DEPARTMENT 2003-2007

Total budget from PD University			
<i>Ordinary Functioning</i>			
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS		DEPARTMENT OF MINERALOGY AND PETROLOGY	
YEAR 2003	€ 45.923,00	YEAR 2003	€ 33.652,00
YEAR 2004	€ 45.900,00	YEAR 2004	€ 33.650,00
YEAR 2005	€ 44.520,00	YEAR 2005	€ 32.640,00
YEAR 2006	€ 45.880,00	YEAR 2006	€ 33.640,00
Total	€ 182.223,00	Total	€ 133.582,00
DEPARTMENT OF GEOSCIENCES	€ 82.821,00		
YEAR 2007			
Total	€ 82.821,00		
MEAN 2003-2007	€ 79.725,20		
<i>Centres and Libraries Functioning</i>			
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS		DEPARTMENT OF MINERALOGY AND PETROLOGY	
YEAR 2003	€ 15.260,68	YEAR 2003	€ 9.097,00
YEAR 2004	€ 13.063,26	YEAR 2004	€ 9.048,00
YEAR 2005	€ 18.636,17	YEAR 2005	€ 13.601,08
YEAR 2006	€ 20.260,04	YEAR 2006	€ 14.475,84
Total	€ 67.220,15	Total	€ 46.221,92
DEPARTMENT OF GEOSCIENCES			
YEAR 2007	€ 37.011,10		
Total	€ 37.011,10		
MEAN 2003-2007	€ 30.090,63		
<i>Extraordinary allotments</i>			
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS		DEPARTMENT OF MINERALOGY AND PETROLOGY	
YEAR 2003	€ 6.305,00	YEAR 2003	€ 2.108,00
YEAR 2004	€ 4.000,00	YEAR 2004	€ 2.152,00

YEAR 2005	/	YEAR 2005	/
YEAR 2006	/	YEAR 2006	€ 6.000,00
Total	€ 10.305,00	Total	€ 10.260,00
DEPARTMENT OF GEOSCIENCES			
YEAR 2007	/		
Total	/		
MEAN 2003-2007	€ 4.113,00		
Budget for undergraduate student education from the University of Padova			
<i>Teaching and student services</i>			
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS		DEPARTMENT OF MINERALOGY AND PETROLOGY	
YEAR 2003	€ 35.526,20	YEAR 2003	€ 26.559,00
YEAR 2004	€ 51.537,24	YEAR 2004	€ 23.921,00
YEAR 2005	€ 32.377,61	YEAR 2005	€ 38.821,90
YEAR 2006	€ 35.073,72	YEAR 2006	€ 28.177,22
Total	€ 154.514,77	Total	€ 117.479,12
DEPARTMENT OF GEOSCIENCES			
YEAR 2007	€ 88.440,17		
Total	€ 88.440,17		
MEAN 2003-2007	€ 72.086,81		
<i>Teaching equipment</i>			
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS		DEPARTMENT OF MINERALOGY AND PETROLOGY	
YEAR 2003	€ 10.000,00	YEAR 2003	/
YEAR 2004	€ 20.000,00	YEAR 2004	€ 5.000,00
YEAR 2005	€ 15.000,00	YEAR 2005	€ 5.000,00
YEAR 2006	€ 10.000,00	YEAR 2006	€ 10.000,00
Total	€ 55.000,00	Total	€ 20.000,00
DEPARTMENT OF GEOSCIENCES			
YEAR 2007	€8.000,00		
Total	€8.000,00		
MEAN 2003-2007	€16.000,00		

Funding for undergraduate student education from the U.E.			
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS		DEPARTMENT OF MINERALOGY AND PETROLOGY	
YEAR 2003	/	YEAR 2003	/
YEAR 2004	/	YEAR 2004	€ 43.065,35
YEAR 2005	/	YEAR 2005	€ 65.703,35
YEAR 2006	€ 55.090,50	YEAR 2006	
Total	€ 55.090,50	Total	€ 108.768,79
DEPARTMENT OF GEOSCIENCES			
YEAR 2007	€ 50.306,24		
Total	€ 50.306,24		
MEAN 2003-2007	€42.833,11		
Funding for graduate student formation from the University of Padova			
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS		DEPARTMENT OF MINERALOGY AND PETROLOGY	
		PhD in Earth Sciences	
YEAR 2003	/	YEAR 2003	€ 8.133,00
YEAR 2004	/	YEAR 2004	€ 8.168,00
YEAR 2005	/	YEAR 2005	€ 6.037,00
YEAR 2006	/	YEAR 2006	€ 19.364,00
Total	/	Total	€ 41.702,00
DEPARTMENT OF GEOSCIENCES			
YEAR 2007	€ 23.568,00		
Total	€ 23.568,00		
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS		DEPARTMENT OF MINERALOGY AND PETROLOGY	
		PhD in Cultural Heritage	
YEAR 2003	/	YEAR 2003	/
YEAR 2004	/	YEAR 2004	/
YEAR 2005	/	YEAR 2005	/
YEAR 2006	/	YEAR 2006	€ 3.600,00
Total	/	Total	€ 3.600,00

DEPARTMENT OF GEOSCIENCES			
YEAR 2007	€ 7.000,00		
Total	€ 7.000,00		
MEAN 2003-2007	€ 15.174,00		
Funding for graduate student formation from the EU			
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS		DEPARTMENT OF MINERALOGY AND PETROLOGY	
YEAR 2003	/	YEAR 2003	/
YEAR 2004	/	YEAR 2004	/
YEAR 2005	/	YEAR 2005	/
YEAR 2006	/	YEAR 2006 <i>EURISPET Marie Curie Prof. B. Cesare</i>	€ 451.988,34
Total	/	Total	€ 451.988,34
DEPARTMENT OF GEOSCIENCES			
YEAR 2007	/		
Total	/		
MEAN 2003-2007	€ 90.397,67		

Research Grants from the University of Padua (ex-60%, Progetti di Ateneo, COFIN, funding for instrumental facilities)			
<i>Funding for major scientific equipment</i>			
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS		DEPARTMENT OF MINERALOGY AND PETROLOGY	
YEAR 2003	/	YEAR 2003	/
YEAR 2004	€ 86.000,00	YEAR 2004	/
YEAR 2005	/	YEAR 2005	/
YEAR 2006	€ 47.692,80	YEAR 2006	/
Total	€ 133.692,80	Total	//
DEPARTMENT OF GEOSCIENCES			
YEAR 2007	39.800,00		
Total	39.800,00		
MEAN 2003-2007	€ 34.698,56		

University PD Research projects			
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS YEAR 2003		DEPARTMENT OF MINERALOGY AND PETROLOGY YEAR 2003	
L. Capraro – Young Researcher Projects	€ 5.000,00	R. Spiess – University PD Projects	€ 65.000,00
		B. Lavina - Young Researcher Projects	€ 6.000,00
		L. Maritan - Young Researcher Projects	€ 5.000,00
Total	€ 5.000,00	Total	€ 76.000,00
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS YEAR 2004		DEPARTMENT OF MINERALOGY AND PETROLOGY YEAR 2004	
R. Gatto – University PD Projects	€ 24.759,00	A. Marzoli – University PD Projects	€ 43.000,00
Total	€ 24.759,00	Total	€ 43.000,00
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS YEAR 2005		DEPARTMENT OF MINERALOGY AND PETROLOGY YEAR 2005	
M. Massironi – University PD Projects	€ 32.600,00	R. Sassi - University PD Projects	€ 35.000,00
C. Stefani - University PD Projects	€ 21.773,00		
Total	€ 54.373,00	Total	€ 35.000,00
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS YEAR 2006		DEPARTMENT OF MINERALOGY AND PETROLOGY YEAR 2006	
P. Mietto - University PD Projects	€ 30.000,00	F. Nestola - University PD Projects	€ 35.000,00
		P. Nimis - University PD Projects	€ 16.792,00
Total	€ 30.000,00	Total	€ 51.792,00
DEPARTMENT OF GEOSCIENCES YEAR 2007			
G. Cassiani	57.000,00		
S. Monari	29.000,00		
Total	86.000,00		
MEAN 2003-2007	€ 81.184,80		
Funds ex MIUR 60%			
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS YEAR 2003		DEPARTMENT OF MINERALOGY AND PETROLOGY YEAR 2003	
A. Renzo	€ 1.700,00	G. Bellieni	€ 3.800,00
P. Fabbri	€ 1.700,00	A. Della Giusta (Dal Negro since 2004)	€ 5.900,00
E. Fornaciari	€ 13.800,00	G. Molin	€ 5.500,00

R. Gatto	€ 1.200,00	P. Nimis	€ 2.600,00
R. Genevois	€ 2.000,00	F.P. Sassi	€ 10.900,00
P. Mietto	€ 5.700,00	D. Visonà	€ 1.300,00
G.B. Pellegrini	€ 4.300,00	Department Director	€ 10.900,00
G. Pennacchioni	€ 10.300,00		
Department Director	€ 16.000,00		
Total	€ 56.700,00	Total	€ 40.900,00
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS YEAR 2004		DEPARTMENT OF MINERALOGY AND PETROLOGY YEAR 2004	
A. Renzo	€ 2.200,00	G. Bellieni	€ 3.600,00
P. Fabbri	€ 1.100,00	A. Della Giusta (Dal Negro since 2004)	€ 5.200,00
E. Fornaciari	€ 6.000,00	P. Frizzo	€ 600,00
R. Gatto	€ 1.500,00	G. Molin	€ 4.500,00
R. Genevois	€ 5.600,00	P. Nimis	€ 2.300,00
I. Vittorio	€ 1.200,00	C. Mazzoli	€ 10.900,00
P. Mietto	€ 6.700,00	D. Visonà	€ 1.800,00
G.B. Pellegrini	€ 6.000,00	Department Director	€ 10.800,00
G. Pennacchioni	€ 12.000,00		
C. Stefani	€ 7.400,00		
Department Director	€ 6.000,00		
Total	€ 55.700,00	Total	€ 39.700,00
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS YEAR 2005		DEPARTMENT OF MINERALOGY AND PETROLOGY YEAR 2005	
A. Renzo	€ 500,00	G. Bellini	€ 3.000,00
P. Fabbri	€ 2.100,00	S. Carbonin	€ 2.900,00
E. Fornaciari	€ 5.500,00	P. Frizzo	€ 500,00
R. Gatto	€ 500,00	G. Molin	€ 3.900,00
R. Genevois	€ 4.400,00	P. Nimis	€ 1.500,00
I. Vittorio	€ 900,00	F.P. Sassi (Mazzoli since 2007)	€ 8.800,00
M. Massironi	€ 4.300,00	D. Visonà	€ 1.500,00
P. Mietto	€ 6.800,00	Department Director	€ 8.300,00
G.B. Pellegrini	€ 4.700,00		
G. Pennacchioni	€ 3.500,00		

C. Stefani	€ 6.900,00		
A. Zaja	€ 1.700,00		
Department Director	€ 9.100,00		
Total	€ 50.900,00	Total	€ 30.400,00
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS YEAR 2006		DEPARTMENT OF MINERALOGY AND PETROLOGY YEAR 2006	
R. Antonelli	€ 400,00	G. Bellieni	€ 3.400,00
A. Caporali	€ 1.700,00	S. Carbonin	€ 2.700,00
P. Fabbri	€ 2.500,00	P. Frizzo (Nimis since 2006)	€ 500,00
E. Fornaciari	€ 6.300,00	G. Molin	€ 3.400,00
R. Gatto	€ 800,00	P. Nimis	€ 1.500,00
R. Genevois	€ 5.500,00	F.P. Sassi	€ 9.600,00
I. Vittorio	€ 900,00	D. Visonà	€ 1.500,00
P. Mietto	€ 8.000,00	Department Director	€ 8.100,00
G. Pennacchioni	€ 9.600,00		
C. Stefani	€ 5.800,00		
A. Zaja	€ 1.700,00		
Department Director	€ 9.200,00		
Total	€ 52.400,00	Total	€ 30.700,00
DEPARTMENT OF GEOSCIENCES YEAR 2007			
A. Renzo	€ 740,00		
G. Bellini	€ 5.373,00		
A. Caporali	€ 1.908,00		
S. Carbonin	€ 8.410,00		
G. Di Toro	€ 4.984,00		
P. Fabbri	€ 1.868,00		
E. Fornaciari	€ 9.189,00		
R. Genevois	€ 4.516,00		
G. Molin	€ 5.373,00		
S. Monari	€ 2.997,00		
P. Nimis	€ 2.687,00		
G. Pennacchioni	€ 4.594,00		
P. Nereo	€ 6.113,00		

G. Salviulo	€ 2.687,00	
R. Spiess	€ 12.654,00	
C. Stefani	€ 6.500,00	
D. Visonà	€ 2.687,00	
A. Zaja	€ 5.294,00	
Department Director	€ 30.560,00	
Total	€ 119.134,00	
General total funds ex MIUR 60%	€ 476.534,00	
MEAN 2003-2007	€ 95.306,80	

Ministero dell'Istruzione, dell'Università e della Ricerca (PRIN)					
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS YEAR 2003	MIUR	ATENEO	DEPARTMENT OF MINERALOGY AND PETROLOGY YEAR 2003	MIUR	ATENEO
A. Caporali	€ 16.700,00	€ 0,00	D. Visonà	€ 28.500,00	€ 11.400,00
A. Dal Prà (Sede a sice 2004) – including 11.600 scholarship	€ 44.000,00	€ 15.000,00			
R. Genevois - incl.11.600 borsa	€ 44.000,00	€ 15.000,00			
D. Rio	€ 50.000,00	€ 17.000,00			
Total	€ 154.700,00	€ 47.000,00	Total	€ 28.500,00	€ 11.400,00
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS YEAR 2004			DEPARTMENT OF MINERALOGY AND PETROLOGY YEAR 2004		
V. De Zanche	€ 32.000,00	€ 13.800,00	A. Dal Negro	€ 26.500,00	€ 11.400,00
F. Massari	€ 27.900,00	€ 12.000,00	G. Molin	€ 46.000,00	€ 19.800,00
P. Mietto	€ 37.000,00	€ 15.900,00	R. Sassi	€ 26.200,00	€ 11.300,00
Total	€ 96.900,00	€ 41.700,00	Total	€ 98.700,00	€ 42.500,00
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS			DEPARTMENT OF MINERALOGY AND PETROLOGY YEAR 2005		

YEAR 2005					
R. Genevois	€ 45.000,00	€ 19.300,00	G. Bellieni	€ 22.200,00	€ 9.600,00
G. Pennacchioni	€ 18.600,00	€ 8.000,00	B. Cesare	€ 53.000,00	€ 22.771,00
D. Rio	€ 37.200,00	€ 16.000,00	C. Mazzoli	€ 38.000,00	€ 16.300,00
A. Zaja	€ 23.000,00	€ 9.900,00			
Total	€ 123.800,00	€ 53.200,00	Total	€ 113.200,00	€ 48.671,00
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS YEAR 2006			DEPARTMENT OF MINERALOGY AND PETROLOGY YEAR 2006		
F. Massari	€ 34.000,00	€ 14.600,00	A. Dal Negro	€ 32.300,00	€ 13.900,00
			R. Sassi	€ 35.110,00	€ 15.100,00
			D. Visonà	€ 23.346,00	€ 10.100,00
Total	€ 34.000,00	€ 14.600,00	Total	€ 90.756,00	€ 39.100,00
DEPARTMENT OF GEOSCIENCES YEAR 2007	<i>Can not detected</i>				
MEAN MIUR 2003-2007	<i>€148.111,20</i>				
MEAN ATENEIO 2003-2007	<i>€59.634,20</i>				

MIUR (Restoration of Geological-Palaeontological Museum (law n. 6/2000))					
DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS	MIUR	ATENEIO	DEPARTMENT OF MINERALOGY AND PETROLOGY	MIUR	ATENEIO
YEAR 2003	/		YEAR 2003		
YEAR 2004	/		YEAR 2004		
YEAR 2005	/		YEAR 2005		

YEAR 2006	€ 40.000,00	€ 4.000,00	YEAR 2006	€ 40.000,00	€ 4.000,00
Total	€ 40.000,00	€ 4.000,00	Total	€ 40.000,00	€ 4.000,00
DEPARTMENT OF GEOSCIENCES YEAR 2007	€ 10.000,00				
MEAN MIUR 2003-2007		€18.000,00			
MEAN ATENEO 2003-2007		€1.600,00			

Research Grants from National & International Agencies:
International research Collaborations

	DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS	DEPARTMENT OF MINERALOGY AND PETROLOGY
YEAR 2003 <i>Project E.U. CERGOP-2 Prof. A.Caporali</i>	€ 139.992,02	/
YEAR 2004	/	/
YEAR 2005	/	/
YEAR 2006	/	/
DEPARTMENT OF GEOSCIENCES YEAR 2007	/	
Total	€ 139.992,02	

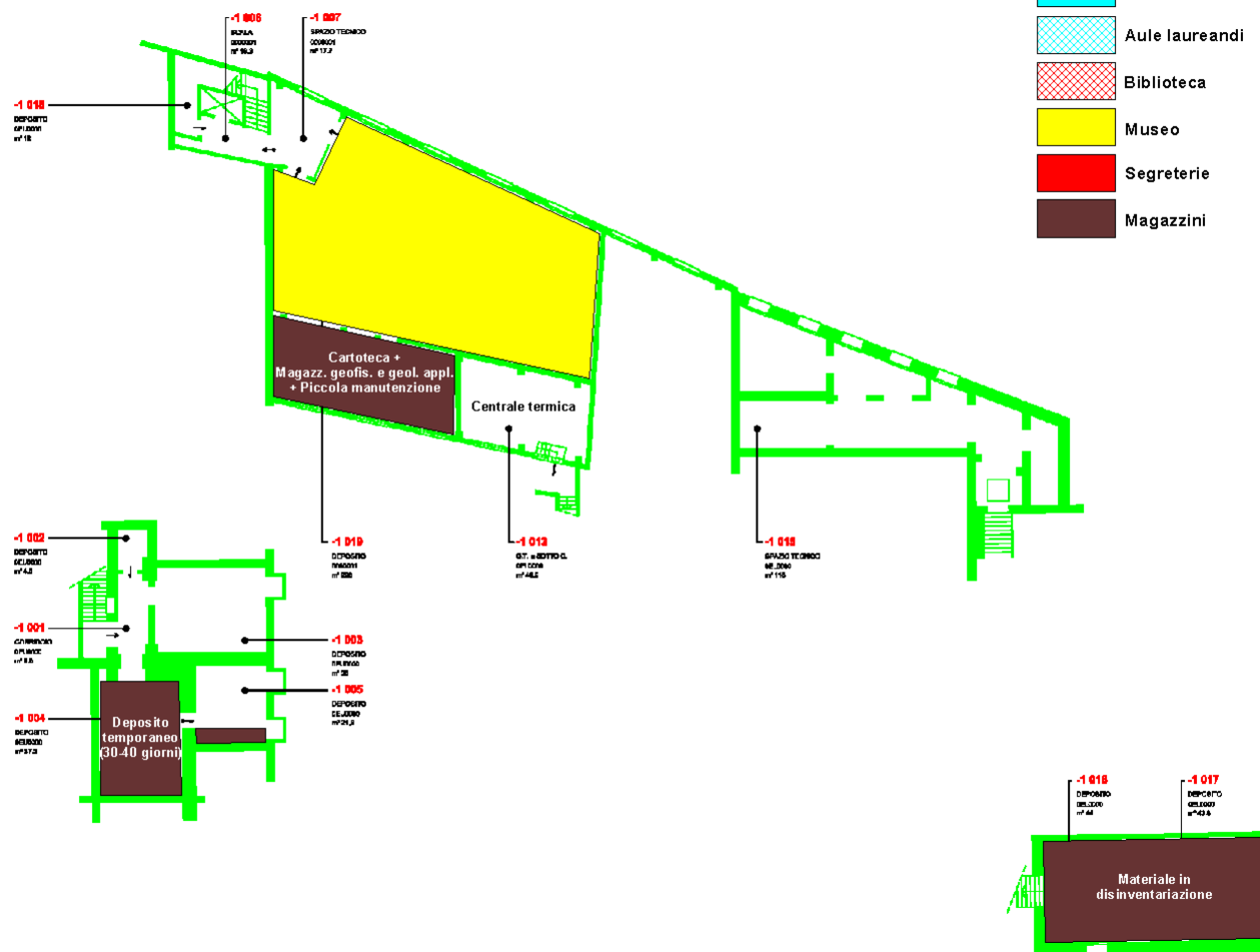
Collaborations with national research institutions:

	DEPARTMENT OF GEOLOGY, PALAEONTOLOGY AND GEOPHYSICS	DEPARTMENT OF MINERALOGY AND PETROLOGY	
YEAR 2003			
ISPET B. Cesare		MIUR	ATENEOUM
		€ 82.000,00	€ 43.500,00
CNR project Prof. R. Genevois	€ 20.000,00		

Total 2003	€ 20.000,00	€ 125.500,00
YEAR 2004		
I.N.G.V.- EPOT A. Zaja	€ 5.000,00	
C.N.R. EUROMARGINS B. Cesare		€ 8.247,00
Comune di Predazzo P. Frizzo		€ 1.000,00
Total 2004	€ 5.000,00	€ 9.247,00
YEAR 2005		
I.N.G.V.- S2/3.2 A. Caporali	€ 37.000,00	
Total 2005	€ 37.000,00	
YEAR 2006		
Regione Veneto A. Caporali	€ 100.000,00	
Provincia di Padova-Caporali	€ 25.000,00	
I.N.G.V.-G. Pennacchioni	€ 5.000,00	
E. Zegna's Foundation C. Mazzoli		€ 80.000,00
Comune di Chiusa Pesio-G. Molin		€ 14.000,00
Comune di Predazzo P. Frizzo		€ 3.000,00
Total 2006	€ 130.000,00	€ 97.000,00

DEPARTMENT OF GEOSCIENCES YEAR 2007		
CARIPARO Foundation – Ecellence Project G. Pennacchioni	€ 450.000,00	
Comune di Rovigo-G. Molin	€ 1.500,00	
Total 2007	€ 451.500,00	

(aggiornato al 19/06/07)

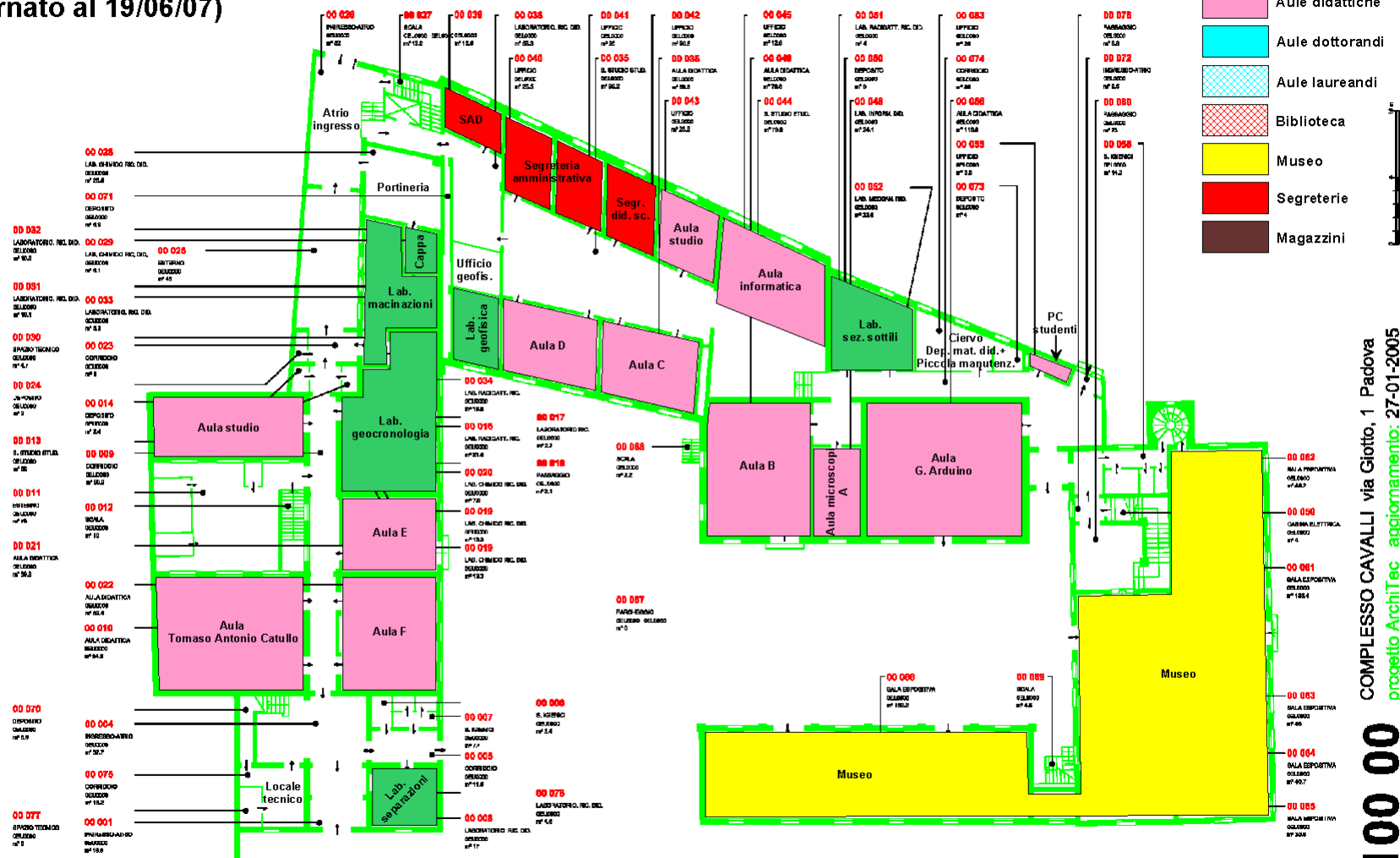


COMPLESSO CAVALLI via Giotto, 1 Padova
progetto ArchiTec aggiornamento: 27-01-2005

00100-1

PIANO TERRA

(aggiornato al 19/06/07)

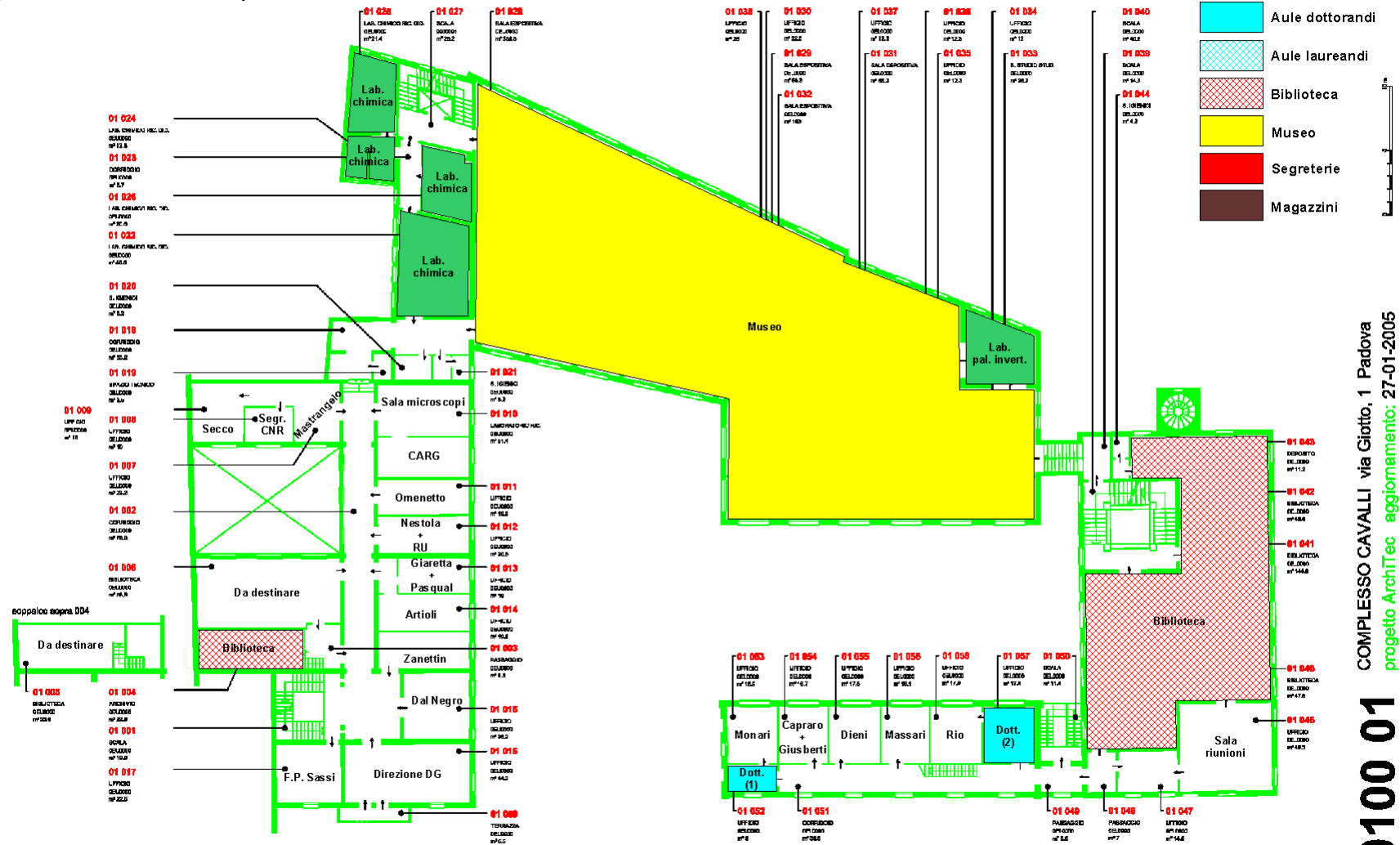


COMPLESSO CAVALLI via Giotto, 1 Padova
progetto ArchiTec aggiornamento: 27-01-2005

00100 00

PRIMO PIANO

(aggiornato al 19/06/07)



COMPLESSO CAVALLI via Giotto, 1 Padova
progetto ArchTec aggiornamento: 27-01-2005

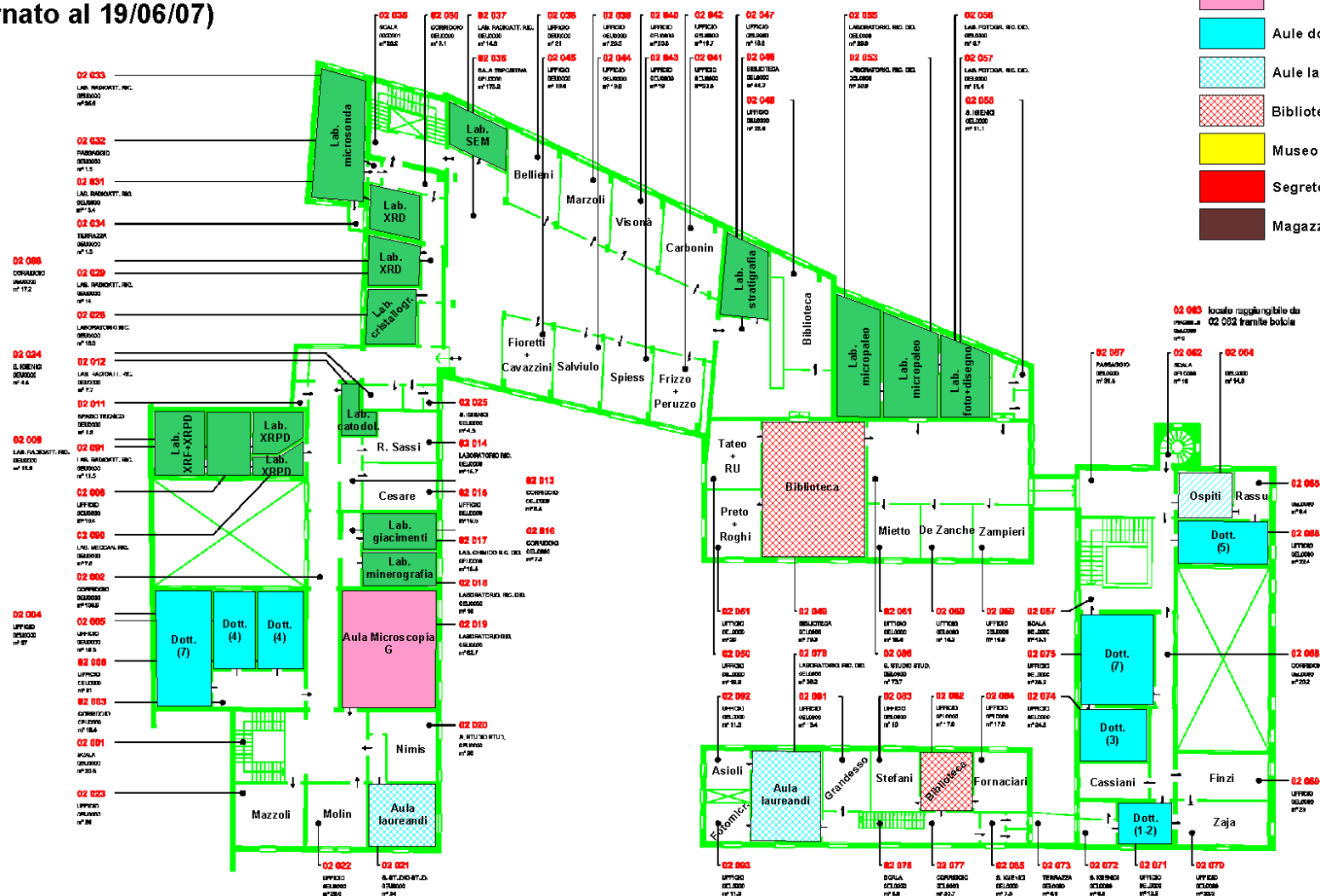
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SECONDO PIANO

(aggiornato al 19/06/07)

LEGENDA

- Laboratori
- Aule didattiche
- Aule dottorandi
- Aule laureandi
- Biblioteca
- Museo
- Segreterie
- Magazzini



00100 02 COMPLESSO CAVALLI via Giotto, 1 Padova
 progetto ArchiTec aggiornamento: 27-01-2005

Sede staccata di Via Risorgimento

Struttura	
0FO0000	Dip. di Storia e Filosofia del Diritto Canonico
0EL0000	Dip. di GEOLOGIA
	Fonoteca

Servizi	Superficie utile
19	147 + archivio al piano interrato
101	479
	56

M mattonelle
— 2 punti dati



PIANTA PIANO TERRA

Attachment: DG8-2

The following Laboratories are annexed to the Department:

- 1) Thin section Laboratory
- 2) Paleontological and sedimentological processing Laboratory
- 3) Geophysics and electronic Laboratory
- 4) Graphic and Image processing Laboratory
- 5) X-ray powder diffraction Laboratory
- 6) Single-crystal X-ray diffraction Laboratory
- 7) XRF Spectrometry Laboratory
- 8) Mineral deposits and mine prospecting Laboratory
- 9) Scanning electron microscopy Laboratory
- 10) Mineral separations Laboratory

In addition the following Laboratories belonging to CNR are located in the DG:

- 11) Geochronology Laboratory
- 12) Rocks Grinding Laboratory
- 13) Chemical Analyses Laboratory
- 14) Electron Microprobe Analyses Laboratory

1) Thin Sections laboratory**Equipment**

- Cut-off machine Struers Unitom-2
- Cut-off machine Struers Labotom-2
- Precision cut-off machine Buehler Isomet 1000
- Lapping machine Struers laboPol-5
- 2 Lapping machines Struers planopol-3
- Thinning system Buehler Petrothin
- Thinning system Logitech LP20
- 2 polishing machines Struers Planopol-V with PdM-Force unit
- Polishing machine Beuhler Vibromet 2

Activity

- **Preparation of thin sections** on natural (rocks) and synthetic (plasters, ceramics, cements, etc.) materials, suitable for mineralogical and petrographical studies by transmitted and reflected light optical microscopy.
- **Preparation of polished thin sections** of rocks and single crystals for analyses by electron microprobe (EMPA), scanning electron microscope (SEM) and cathodoluminescence, and for fluid inclusions study.
- **Preparation of special polished sections** of biological materials as zoologic samples (e.g. otoliths, lamellibranchs), medical samples (e.g. cardiac and orthopedic bioprosthesis), odontological samples (e.g. dental implants), archaeological samples (e.g. plasters, ceramics, pigments, glasses, metals). These sections are particularly aimed at electron microscopic (SEM, TEM) and spectroscopic (EMPA, PIXE) studies.

2) Paleontological and sedimentological preparations laboratory

Activity

- Granulometry.
- Sediment particles size determinations.
- Calcimetry.
- Calcium carbonate equivalent determinations, using a CO₂ Coulometer mod. 5014.

Micropaleontological preparations:

- smear slides preparation for nannoplankton identification
- washing and sieving - washing with hydrogen peroxide
- Neodesogen method
- attack with acid solution
- Schulz solution
- attack with pure nitric acid
- Cold acetolysis method

Minerals separation:

- decalcification
- grains cleaning with oxalic acid
- gravitative separation with high density liquid
- samples preparation for optical microscopy analysis.

Thin sections colouring for identification of:

- feldspars
- calcite and dolomite
- calcite, Fe-calcite and Fe-dolomite.

3) Geophysics and Electronics Laboratory

Activity

- hardware and software design for geophysical data acquisition systems;
- maintenance of geophysics laboratory equipments;
- didactic support for geophysical measurements.

4) Photographic laboratory and graphics processing

Activity

Photographic laboratory: black and white and colour photographic material preparation for scientific papers and didactics, by means of analogical and digital photographic recording, image digital acquisition with scans, development and printing black and white. In particular:

- * Shading techniques on micro - macro fossils, also with "withening" (i.e. magnesium sublimation on sample).
- * Analogical and digital photographic recording on microscope.
- * Photographic tables creation for scientific papers.
- * Film scan.
- * Digital photo retouching
- * Virtual 360° view creation.

Graphical Service:

- Image acquisition with plane scanner.
- Digital drawing as geological maps, topographical maps, illustrations, conference posters.
- Image elaborations, photo retouching.
- Black and white and colour printing with inkjet printer (A4 and A3 sizes).

Terrestrial Laser Scanner (TLS), for geological survey.

5) X-ray powder diffraction (XRPD) laboratory**Equipments:**

- 1) XRPD diffractometer Philips X'Pert Pro
- 2) XRPD diffractometer Philips X'Change (IGG-CNR)

Philips X'Pert PRO: is a multi-propose diffractometer (MPD) with Bragg-Brentano parafocusing geometry. System consists of a vertical theta-theta goniometer (240 mm radius). The X-ray source is a long-fine-focus, ceramic X-ray tube with Cu anode. The system optics consist of fixed divergence, antiscatter and receiving slits, incident and diffracted beam Soller slits, a curved graphite diffracted beam monochromator and a gas sealed proportional counter detector.

Diffractometer is equipped with:

- Flat Sample Stage, for typical powder mounts
- Multi Propose Sample Stage for massive specimens (max 1 Kg)
- Capillary Spinner for powders mounted on capillary tubes (300 micron diameter)
- high temperature chamber Anton Paar HTK 16 (from ambient temperature to 1600 °C)

Philips X'Change (goniometer PW1050/37, controller PW3710): is a diffractometer with Bragg-Brentano parafocusing geometry. System consists of a vertical theta-2theta goniometer (173 mm radius) installed on a Philips high tension generator PW3830. The X-ray source is a long-fine-focus, glass X-ray tube with Cu anode. The system optics consist of fixed divergence, antiscatter and receiving slits, incident and diffracted beam Soller slits, a curved graphite diffracted beam monochromator and a gas sealed proportional counter detector.

Software for data processing

The XRD data are collected on PC by the program X'Pert Data Collector. Other available programs are X'Pert Data Viewer, Philips Profit (for profile fitting) and X'Pert High Score Plus (for qualitative and semiquantitative analysis). GSAS (Larson & Von Dreele, 1994) and High Score Plus are currently used for Quantitative Rietveld analysis, cell and structure refinements.

Activity

The main field of the investigations is the qualitative and quantitative analysis of geological specimens. Crystalline size determinations and structural analysis are also possible. Phase transitions and lattice expansions can be determined with the HTK16 chamber. The instrument equipment allow to analyse powder specimens with vary mounting methods (front, back and side loading, capillary) but also massive specimens, thin sections etc.

6) Single-crystal X-ray diffraction (XRD) laboratory

Equipment and Activity

The laboratory is equipped with two single-crystal diffractometers dedicated to structural researches under ambient and non ambient conditions.

A first diffractometer STOE AED4 (very recently acquired in substitution of an older four-circles SIEMENS AEDII) is doted of a point detector and a heating device to reach extremely high temperatures (e.g. 1100°C) for in situ single-crystal measurements. A second diffractometer STOE Stadi4 is equipped with a CCD detector, which allows very fast measurements. Both the diffractometers have been recently doted of three ETH-type (Zurich) and one Merrill- Bassett diamond anvil cells. The diamond cells allow in situ measurements up to very high-pressure typical of Earth's mantle. The laboratory has been equipped by a microRaman system in order to allow ruby measurements to determine the pressure in the DAC chamber.

The laboratory is involved in several national and international collaborations relative to both ambient and non ambient crystallography (e.g. high-temperature and high-pressure).

7) X-ray fluorescence (XRF) laboratory

Equipment and Activity

The laboratory is equipped with a sequential spectrometer Philips PW2400 working on wavelength dispersion system (WDS), operating with SuperQ software for qualitative and quantitative analyses. The instrument is equipped with Rh tube (3 kW of maximum power), 5 analyzing crystals (LiF200, LiF220, Ge, PE, TIAP), 2 detectors (gas flow and scintillation detector), 3 collimators (150, 300 and 700 µm), 4 filters (Al 200 µm, Brass 100 and 300 µm, Pb 1000 µm), sample changer Philips PW2510 with 30 position. Analyses are performed in vacuum.

Elements determined are Si, Ti, Al, Fe, Mn, Mg, Ca, Na, K and P (major elements, expressed as % of relative oxide), and Sc, V, Cr, Co, Ni, Cu, Zn, Ga, Rb, Sr, Y, Zr, Nb, Ba, La, Ce, Nd, Pb, Th and U (trace elements, expressed as ppm). Analyses are carried out on fused beads samples (a fused bead is a solid solution obtained by fusion of the calcined sample diluted in 1:10 ratio with lithium tetraborate, Li₂B₄O₇; the instrument for sample fusions is a Claisse Fluxy fusion apparatus). The FeO content determination is carried out by titration with potassium permanganate.

XRF analyses are carried out on geological samples and their derivates (as ceramics, ancient glasses, etc.) using geological standards.

8) Mineral deposits and mine prospecting Laboratory

Equipments

- Polishing machine Depiereux
- Lapping machine Labo-Pol 5 Struers
- Manual lapper Buehler Metaserv
- Magnetic Agitator Microstirrer
- Vertical drill with hydraulic head SerrMac
- Ultrasound bath Branson 2210
- Oven Gelman (250°C)
- Electronic balance BP 2100 Sartorius
- Epovac Struers for vaccum-sealed impregnating
- pH-meter WTW Multiline P4
- Calcimeter Dietrich-Fruhling
- Scintillometer Saphymo Stel
- Reflected light microscope Leica DLMP
- Transmitted-reflected light microscope Nikon Labophot2-POL
- 2 reflected light microscopes Leitz SM-LUX-POL

Activities

1. Preparation of polished sections of rock samples, metalliferous minerals, metals for analyses by microscope, electron microprobe (EMPA), scanning electron microscope (SEM).
2. Manual polishing of sections and macrosamples for minerographic studies.
3. Calcimetry and Dolometry in rock, soil and sediment samples.
4. Insoluble residue determinations with HCl diluted solution.
5. Separations of different mineralogical phases using heavy liquids.
6. pH and electric conductivity EC measures with WTW Multiline P4 Set.
7. Fluorescence determination with UV lamp on minerals and materials UV-sensitive for mineralogical studies.
8. Radioactivity measurements with scintillometer on rock and mineral samples.

9) Scanning electron microscopy (SEM) laboratory**Equipment:**

The CamScan Mx 2500 SEM of the Geoscience Department is a fully computer controlled 4 lens automated scanning electron microscope equipped with a 6 axes fully eucentric goniometer stage, a four channel solid state backscatter detector, a swivel mounted secondary electron detector, a fully automated 2-axis motor driven stage and a tungsten filament (upgrading to a LaB6 source is arranged for the 2008). The SEM disposes of a Phoenix - EDAX microanalysis system with a Sapphire Li(Si) type detecting unit and a Supra Ultra thin Window for detection of all elements from Beryllium and heavier in a standardless mode. The microscope is also equipped with an HKL Channel 5 EBSD system which enables electron backscatter analysis of any crystalline material both in automated as well as in manual mode.

10) Mineral separations Laboratory**Activity**

Preparation of samples by grinding into mortars, selecting by granulometry. Sieving of samples. Separations of different mineralogical phases using heavy liquids. Chemical treatments for rocks and minerals preservation.

Equipments

- n. 2 stereomicroscopes,
- n. 1 microscope for mineralogy,
- centrifuge,
- ultrasound bath,
- analytical balance,
- oven (200°C).

11) Geochronology Laboratory**Equipments**

The Geochronology laboratory consists of two sections devote to: i) Chemical Section (for chemical treatment of samples); ii) Mass Spectrometry Section (for measurements of isotopic compositions).

In the Chemical Section chemical reagents purification, samples dissolution under conditions of air

subjected to molecular filtration, and chromatography operations required for mass spectrometry analysis are carried out. This Section is equipped with: 1) spike solutions of Rb, Sr, Sm and Nd for geochronological analyses Rb-Sr and Sm-Nd (Isotopic Dilution-Mass Spectrometry method, ID-MS); 2) Gelman box for air molecular filtration, for samples weighing, spike addition operations for analyses in isotopic dilution, and samples loading on filaments for mass spectrometric analysis.

The Mass Spectrometry Section is equipped with: 1) mass spectrometer for solids (TIMS) with single collector-extended geometry Micromass VG 54E (8 kV voltage, 54 cm beam deflection radius), operating with ANALYST software (Ken R. Ludwig, Berkeley Geochronology Center); 2) degassing unit for filaments cleaning under vacuum conditions.

Application fields:

- Crystalline basements Geochronology;
- Chemical and isotopical evolution processes of magmatic systems;
- Methodology

12) Rocks Grinding Laboratory

Equipments

- Jaw crusher Retsch BB200 (with tungsten carbide jaws) for very hard, hard, friable and plastic materials crushing.
- Magnetic separator S.G. Frantz Co. L-1, for mineralogical phases separation depending on magnetic susceptibility.
- 2 sieve machines Giuliani IG/1/S 300 e IG/3 (diameter 150, 200, 300 mm).
- Vibratory disk mill Retsch RS100 (with agata and tungsten carbide disks), for very hard, hard, friable and plastic materials crushing, to obtain powder samples with grain size <10 micron.
- Laboratory agate mortar grinder Retsch RM0, for small amount of materials crushing.
- Digital analytical balance Kern PB 4000-2, max capacity 4100 g, division 0.01g.

Application fields:

Preparation of powder samples with grain size <10 micron for chemical and/or diffractometrical analyses, and different mineralogical phases separation.

13) Chemical Analyses Laboratory

Equipments

- Reverse osmosis water purification system.
- water purification system Milli Q for high resistivity water production.
- Muffle furnace (temperature up to 1200°C), equipped with digital timer.
- Oven (temperature up to 300°C), equipped with auto-tuning digital microprocessor PID thermoregulator.
- 2 electronic analytical balances, max capacity 150 g and 400 g, division 0.1 mg and 1 mg, respectively.
- Single-ray UV Spectrophotometer Perkin-Elmer, equipped with holographic grating monochromator (1440 lines/mm), operating at wavelength between 190 and 900 nm.
- Potentiometric titration system ORION Mod. 960 Autochemistry System with pH/Ise-meter EA 940, module 960 and printer. This instrument is equipped with iono-selective electrodes (Pb, F, Cl, I, Ag/S, CO₂, Pt), double and single junction reference electrodes, and pH electrode.
- Atomic Absorption Spectrophotometer Perkin-Elmer AAS 5000, equipped with lamps HCL and EDL.

- Prototype equipment for thermogravimetric (TG) and thermogravimetric (DTA) analyses.
- Elemental analyzer CHNS EA1110 CE Instruments, equipped with analytical balance Mettler AT 21 comparator.
- Caisse Flux fusion apparatus.

Application fields:

- Determination of elements amount, by wet analysis, in samples of minerals, rocks, soils and clay minerals.
- Cationic, anionic and trace constituents analyses on natural waters.
- Thermal analyses (TG and DTA) and elemental analyses (CHNS) on natural samples and industrial products.
- Loss on ignition determination.
- FeO content determination, carried out by titration with potassium permanganate.

14) Electron Microprobe Analyses (EMPA) Laboratory

Equipments

- Microprobe Cameca SX 50, equipped with 4 vertical spectrometers working on wavelength dispersion system (WDS), analyzing crystals TAP, 2 PET, 3 LIF and 1 PC1, detectors for SE, BSE and RX, and a spectrometer working on energy dispersion system (EDS). A telecamera connected to a monitor allow to examine the sample on transmitted and reflected light.
- Hardware-Software systems SAMx: XMAS for WDS and EDS analyses, IDFIX for EDS detectors management, HIMAX for image acquisition with beam and sample scan (SE, BSE, RX), MAXVIEW for image elaborations.
- Graphite vacuum coater, secondary vacuum (10⁻⁵) Edwards mod. E 306.
- Stereomicroscope Zeiss
- Microscope Leitz with transmitted and reflected light.

Application fields:

- Earth sciences (silicates, oxides, carbonates, phosphates, sulphates and sulphides).
- Materials sciences (glasses, ceramics).
- Archaeology (metallic alloys, potteries, ceramics, etc.).

PRIN GRANTS 2003-2007				
YEAR	LOCAL PRINCIPAL INVESTIGATOR	TITLE OF LOCAL PROJECT	NATIONAL P.I.	COLLABORATIONS WITH UNIVERSITIES
2003	Caporali Alessandro Dip. di Geologia, Paleontologia e Geofisica	Analysis geodetic data from the EUREF network: estimate of the uncertainty on changes in the coordinates time series on account of the noise model.	Mantovani Enzo	Università degli studi di Siena Università degli studi di Bologna Università degli studi di Salerno Università degli studi di Basilicata
2003	Dal Prà Antonio Dip. di Geologia, Paleontologia e Geofisica	Ground-based monitoring of high-risk geological instabilities and large structures: geological and geotechnical investigations, numerical analyses and use of remote sensing techniques for risk prediction and hazard prevention.	Dal Prà Antonio	Università degli studi di Firenze Università degli studi di Ferrara
2003	Genevois Rinaldo Dip. di Geologia, Paleontologia e Geofisica	Catastrophic landslides: Analysis of triggering mechanisms and evolution of large high risk landslides by means of geophysical surveys, satellite remote sensing and numerical models.	Prestinanzi Alberto	Università degli studi di Roma "La Sapienza" Università degli studi di Sannio - Benevento Università degli studi di Milano – Bicocca
2003	Rio Domenico Dip. di Geologia, Paleontologia e Geofisica	The Early Eocene climatic Optimum (EECO) and the middle to late Eocene "doubthouse" world in the pelagic record of Veneto region: comparison with the Ocean Drilling Program (ODP) pelagic record.	Premoli Silva Isabella	Università degli studi di Milano Università degli studi di Firenze Università degli studi di Parma Università degli studi di Chieti - Pescara
2003	Visonà Dario Dip. di Mineralogia e Petrologia	Cainozoic leucogranite magmatism and tectonometamorphic evolution in the Himalayas	Garzanti Eduardo	Università degli studi di Milano Università degli studi di Pisa Università degli studi di Torino
2004	Dal Negro Alberto Dip. di Mineralogia e Petrologia	Order-disorder processes and point defects in spinels.	Bruno Emiliano	Università degli studi di Torino Università degli studi di Perugia Università degli studi di Pavia Università degli studi di Roma
2004	De Zanche Vittorio Dip. di Geologia, Paleontologia e Geofisica	Paleogeographic setting and climatic events in the Upper Triassic and Jurassic of the Southern Alps and Sardinia.	Lualdi Alberto	Università degli studi di Torino
2004	Massari Francesco Dip. di Geologia, Paleontologia e Geofisica	High resolution analysis of the middle-late Pleistocene interglacial stages (0-450 ky BP) within the Crotone Basin and in some ODP Mediterranean sites, with particular concern in the history of	Sprovieri Rodolfo	Università degli studi di Palermo Università degli studi di Catania Università degli studi di Urbino

		MIS 11 and MIS 5.		
2004	Mietto Paolo Dip. di Geologia, Paleontologia e Geofisica	Intergrated biostratigraphy and isotope stratigraphy of Middle-Upper Triassic pelagic deposits of the Southern Alps and Lagonegro Basin.	Passari Leonsevero	Università degli studi di Perugia Università degli studi di Napoli Università degli studi di Firenze Università degli studi di Camerino
2004	Molin Gianmario Dip. di Mineralogia e Petrologia	Archaeometric studies of metals and glass findings. Geomaterials, production technology and socio-economic context. Alteration progresses and preservation strategies.	Messiga Bruno	Università degli studi di Pavia Università degli studi di Modena e Reggio Emilia Università degli studi di Pavia Università degli studi di Siena
2004	Sassi Raffaele Dip. di Mineralogia e Petrologia	Metamorphic micas: correlations between mineral chemistry and physical and chemical conditions of crystallization.	Brigatti Maria Franca	Università degli studi di Modena e Reggio Emilia Università degli studi di Roma Tre Università degli studi di Milano Università degli studi di Bari
2005	Bellieni Giuliano Dip. di Mineralogia e Petrologia	The Central Atlantic Magmatic Province (CAMP): age, origin, and climatic effects at the Triassic-Jurassic boundary.	Jadoul Flavio	Università degli studi di Trieste Università degli studi di Perugia
2005	Cesare Bernardo Dip. di Mineralogia e Petrologia	Petrologic study of fluid-metal-rock interactions during the anatexis of graphitic metapelites: a comparison between spanish xenoliths and indian granulites.	Cesare Bernardo	Università degli studi di Parma
2005	Genevois Rinaldo Dip. di Geologia, Paleontologia e Geofisica	Assessment of debris flow mobilization and hazard in Alpine Environment (Cortina D'Ampezzo, BL).	Genevois Rinaldo	Università degli studi di Insubria (VA-CO) Università degli studi di Sanno di Benevento Università degli studi di Trento
2005	Mazzoli Claudio Dip. di Mineralogia e Petrologia	Archaeometrical investigations on plasters, paintings and floors at Pompeii: functional characterisation and implications for a new building chronology.	Mazzoli Claudio	
2005	Pennacchioni Giorgio Dip. di Geologia, Paleontologia e Geofisica	Study of exhumed pseudotachylite-bearing faults as a gauge to estimate earthquake source parameters.	Pennacchioni Giorgio	Università degli studi di Perugia Università degli studi di Pisa

2005	Rio Domenico Dip. di Geologia, Paleontologia e Geofisica	Interaction between global change and biotic evolution: clues from calcareous plankton in selected time slices of the Paleocene and Eocene.	Premoli Silva Isabella	Università degli studi di Milano Università degli studi di Firenze Università degli studi di Parma Università degli studi di Chieti-Pescara
2005	Zaja Annalisa Dip. di Geologia, Paleontologia e Geofisica	Geophysical and Hydro-geological methods to characterize the Parma aquifer.	Giudici Mauro	Università degli studi di Milano Università degli studi di Modena e Reggio Emilia Università degli studi di Parma
2006	Dal Negro Alberto Dip. di Mineralogia e Petrologia	In situ investigations on chemical-physical properties of earth's mantle minerals under extreme conditions of pressure and temperature.	Zanazzi Pier Francesco	Università degli studi di Perugia Università degli studi di Torino Università degli studi di Pavia
2006	Massari Francesco Dip. di Geologia, Paleontologia e Geofisica	The Middle to Late Pliocene climatic transition: a Mediterranean perspective.	Massari Francesco	Università degli studi di Palermo
2006	Sassi Raffaele Dip. di Mineralogia e Petrologia	Biotite and muscovite features an enviromental indicators in metamorphic changes.	Brigatti Maria Franca	Università degli studi di Modena e Reggio Emilia Università degli studi di Roma Tre Università degli studi di Bari Università degli studi di Milano
2006	Visonà Dario Dip. di Mineralogia e Petrologia	Exhumation of the Himalayan Chain: the magmatic record.	Garzanti Eduardo	Università degli studi di Milano Bicocca Università degli studi di Torino Università degli studi di Pisa

TOTAL CITATIONS

	Number of ISI publications considered	Total citations	Total citations without self-citations	H - index	Year of first ISI publication
Artioli Gilberto	107	1377	889	21	1990
Rio Domenico	37	494	381	12	1989
Sassi Francesco Paolo	22	426	308	13	1992
Bellieni Giuliano	30	383	303	10	1990
Cesare Bernardo	29	366	237	11	1993
Molin Gianmario	46	360	172	10	1990
Marzoli Andrea	22	351	264	8	1997
Pennacchioni Giorgio	23	323	213	12	1996
Nimis Paolo	17	322	249	7	1996
Spiess Richard	13	261	189	6	1991
Cassiani Giorgio	22	186	123	8	1997
Massari Francesco	22	183	128	9	1990
Fornaciari Eliana	12	164	135	7	1996
Sassi Raffaele	14	161	149	6	1994
Nestola Fabrizio	37	149	67	7	2001
Carbonin Susanna	14	146	82	6	1989
Di Toro Giulio	10	124	99	6	2001
Salviulo Gabriella	22	116	100	6	1989
Visonà Dario	21	100	81	25	1990
Preto Nereo	14	95	71	5	2001
Mietto Paolo	15	95	59	5	1992
Dal Piaz Giorgio Vittorio	9	79	57	5	2001
Massironi Matteo	11	76	53	5	2000
De Zanche Vittorio	7	75	57	4	1999
Mazzoli Claudio	15	73	67	5	1992
Dal Negro Alberto	12	61	44	4	1989
Caporali Alessandro	9	54	44	5	1993
Frizzo Pietro	6	40	38	3	1991
Genevois Rinaldo	7	36	29	3	1998
Secco Luciano	9	30	29	3	1990
Capraro Luca	6	27	23	2	2002
Zampieri Dario	4	21	15	3	1995
Stefani Cristina	7	19	12	3	2000
Maritan Lara	9	19	8	3	2003
Fabbri Paolo	5	18	15	2	1997
Zaja Annalisa	10	14	13	2	1998
Grandesso Paolo	2	12	12	1	1996
Galgaro Antonio	10	12	10	2	2000
Pellegrini G.Battista	3	11	10	2	1996
Giusberti Luca	7	11	7	2	2002
Ghinassi Massimiliano	5	8	3	2	2004
Monari Stefano	4	7	6	2	2001
Omenetto	5	4	4	1	1991
Sedea Roberto	1	3	3	1	2003
Floris Mario	4	2	1	1	2002
Visentin Ester	2	1	1	1	2006
Iliceto Vittorio	1	1	1	1	2003
Dieni Iginio	3	1	1	1	2005
Finzi Ermanno	2	1	1	1	2000
Antonelli Renzo	2	1	0	1	1991
Deiana Rita	1	0	0	1	2007
Gatto Roberto	0				

WITHOUT SELF CITATIONS

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Iliceto Vittorio	1	1	1	1	2003
Dieni Iginio	3	1	1	1	2005
Finzi Ermanno	2	1	1	1	2000
Antonelli Renzo	2	1	0	1	1991
Deiana Rita	1	0	0	1	2007
Gatto Roberto	0				

CIVR - Valutazione dei prodotti

	Product	Authors	Lang	Structure	Periph. Structure	Property index	Year	Type	Journal	Impact factor	Area	ISI	Evaluation
code: 029032	Development of a remotely controlled debris flow monitoring system in the Dolomites (Acquabona, Italy)	TECCA P. R; GALGARO A; GENEVOIS R; DEGANUTTI A.M.	EN	Univ. PADOVA	Dip. GEOLOGIA, PALEONTOLOGIA E GEOFISICA	0.5	2003	Articolo su rivista	HYDROLOGICAL PROCESSES	1.242	04 - Earth sciences	IS0261 - Earth Sciences	B
code: 033629	Emergence of Venice during the Pleistocene	KENT D.V; RIO D; MASSARI F; KUKLA G; LANCI L.	EN	Univ. PADOVA	Dip. GEOLOGIA, PALEONTOLOGIA E GEOFISICA	0.4	2002	Articolo su rivista	QUATERNARY SCIENCE REVIEWS	2.842	04 - Earth sciences	IS0261 - Earth Sciences	E
code: 028985	Interplay between tectonics and glacio-eustasy: Pleistocene succession of the Crotone basin, Calabria (southern Italy)	MASSARI F; RIO D; SGAVETTI M; PROSSER G; D'ALESSANDRO A; ASIOLI A; CAPRARO L; FORNACIARI E; TATEO F.	EN	Univ. PADOVA, Univ. BASILICATA	Dip. GEOLOGIA, PALEONTOLOGIA E GEOFISICA	0.56	2002	Articolo su rivista	GEOLOGICAL SOCIETY OF AMERICA BULLETIN	2.097	04 - Earth sciences	IS0261 - Earth Sciences	E
code: 030053	Middle Triassic orbital signature recorded in the shallow-marine Latemar carbonate buildup (Dolomites, Italy)	PRETO N; HINNOV L.A; HARDIE L.A; DE ZANCHE V.	EN	Univ. PADOVA	Dip. GEOLOGIA, PALEONTOLOGIA E GEOFISICA	0.5	2001	Articolo su rivista	GEOLOGY	2.488	04 - Earth sciences	IS0261 - Earth Sciences	E
code: 030882	Strain-insensitive shape preferred orientation of porphyroclasts in Mont Mary mylonites	PENNACCHIONI G; DI TORO G; MANCKTELOW N.S.	EN	Univ. PADOVA	Dip. GEOLOGIA, PALEONTOLOGIA E GEOFISICA	0.5	2001	Articolo su rivista	JOURNAL OF STRUCTURAL GEOLOGY	1.57	04 - Earth sciences	IS0261 - Earth Sciences	B
code: 019227	Cation distribution and structure modelling of spinel solid solutions	LAVINA B; SALVIULO G; DELLA GIUSTA A.	EN	Univ. PADOVA	Dip. MINERALOGIA E PETROLOGIA	1	2002	Articolo su rivista	PHYSICS AND CHEMISTRY OF MINERALS	1.306	04 - Earth sciences	IS0261 - Earth Sciences	E
code: 021163	Development of garnet porphyroblasts by multiple nucleation, coalescence and boundary driven rotations	SPIESS R; PERUZZO L; PRIOR D.J; WHEELER J.	EN	Univ. PADOVA	Dip. MINERALOGIA E PETROLOGIA	0.38	2001	Articolo su rivista	JOURNAL OF METAMORPHIC GEOLOGY	2.01	04 - Earth sciences	IS0261 - Earth Sciences	E
code: 017738	Primary melt inclusions in andalusite from anatectic graphitic metapelites: implications for the Al ₂ SiO ₅ triple point	CESARE B; MARCHESI C; HERMANN J; GOMEZ-PUGNAIRE M.T.	EN	Univ. PADOVA	Dip. MINERALOGIA E PETROLOGIA	0.25	2003	Articolo su rivista	GEOLOGY	3.065	04 - Earth sciences	IS0261 - Earth Sciences	E
code: 019177	Revised thermobarometry of Alpe Arami and other garnet peridotites from the Central Alps	NIMIS P; TROMMSDORFF V.	EN	Univ. PADOVA	Dip. MINERALOGIA E PETROLOGIA	0.5	2001	Articolo su rivista	JOURNAL OF PETROLOGY	3.283	04 - Earth sciences	IS0261 - Earth Sciences	E

E: Excellent; B: Good; A: Acceptable; L: Limited; NV: Not evaluable