Nuove proprietà Chimico-fisiche dell’acqua

V. Elia, E. Napoli & M. Niccoli

- vittorio.elia@unina.it
- elena.napoli@unina.it
- marcella.niccoli@unina.it

Pulsatilla

Nux Vomica
Sponsors:

• REGIONE CAMPANIA
  Assessorato alla Sanità  MNC Cap. 1700
• BOIRON
32. V. Elia, E. Napoli, M. Niccoli
“Calorimetric and Conductometric Titrations of Nanostructures of Water Molecules in Iteratively Filtered Water”
JTAC, 2011, Submitted

31. V. Elia, N. Marchettini, E. Napoli, E. Tiezzi
“Nanostructures of Water Molecules in Iteratively Filtered Water”
JOAM, 2011 Submitted

30. V. Elia, E. Napoli
“Nanostructures of Water Molecules in Iteratively Filtered Water”
IC-MAST, 2011 (key Engineering materials) Accepted

29. L. Betti, V. Elia, E. Napoli, G. Trebbi, M. Zurla, D. Nani, M. Peruzzi, M. Brizzi
“Biological effects and physico-chemical properties of extremely diluted aqueous solutions as a function of aging-time”
FLS, 2011, In press

28. T. M. P. Cattaneo, S. Vero, E. Napoli, V. Elia
“Influence of Filtration Processes on Aqueous Nanostructures by NIR Spectroscopy”
JCHE, 2011 Online

27. V. Elia, L. Marrari, E. Napoli
“Aqueous Nanostruttutre in water induced by Electromagnetic Field Emitted by EDS. A Conductometric Study of Fullerene and Carbon Nanotube EDS.
JTAC, 2011 Online

26. V. Elia, E. Napoli, R. Rizzo
“The new frontiers of Hydrology”
25. M. Brizzi, V. Elia, G. Trebbi, D. Nani, M. Peruzzi, L. Betti
“The Efficacy of Ultramolecular Aqueous Dilutions on a Wheat Germination Model as a Function of Heat and Aging-Time”
eCAM, 2009, Doi:10.1093/ecam/nep217

24. T. M. P. Cattaneo, S. Vero, E. Napoli, V. Elia
“Studio degli effetti di processi fisici di filtrazione sulla formazione di nanostrutture acquose mediante spettroscopia NIR”
IV Simposio Italiano di Spettroscopia nel Vicino Infrarosso – Sestri Levante 2010

23. V. Elia, E. Napoli, M. Niccoli
“Thermodynamic Parameters for the Binding Process of the OH- Ion with the Dissipative Structures. Calorimetric and Conductometric Titrations”
Calorimetric and Conductometric Titrations

22. V. Elia, E. Napoli
“Dissipative Structures in Extremely Diluted Solutions of Homeopathic Medicines. A Molecular Model based on Physico-Chemical and Gravimetric evidences”

21. V. Elia, E. Napoli, M. Niccoli
“A Molecular Model of Interaction between of Extremely Diluted Solutions and NaOH Solutions Used as Titrant. Conductometric and pHmetric Titrations.”
Journal of Molecular Liquids, 2009, Vol.149, 45-50

20. C. M. Cacace, L. Elia, V. Elia, E. Napoli, M. Niccoli
“Conductometric and pHmetric Titrations of Extremely Diluted Solutions Using HCl Solutions as Titrant. A Molecular Model.”
19. E. Del Giudice, V. Elia, E. Napoli, A. Tedeschi
“The Role of Water in The Living Organisms”

18. L. Ciavatta, V. Elia, E. Napoli, M. Niccoli
Journal of Solution chemistry (2008), Vol. 37, 1037-1049

17. V. Elia, L. Elia, N. Marchettini, E. Napoli, M. Niccoli, E. Tiezzi
Physico-Chemical Properties of aqueous Extremely Diluted Solutions in relation to ageing

16. V. Elia, E. Napoli, M. Niccoli
On the stability of extremely diluted aqueous solutions at the high ionic strength. A calorimetric study at 298K

15. P. Belon, V. Elia, L. Elia, M. Montanino, E. Napoli, M. Niccoli
Conductometric and Calorimetric studies of the Diluted and Agitated Solutions. On the combined Anomalous Effect of time and volume parameters.

14. V. Elia
New Physico-Chemical Properties of Extremely Dilute solutions. A Conductivity Study at 25°C in Relation to Ageing”.

12. V. Elia, E. Napoli,
“Strutture Dissipative nelle Soluzioni Estremamente Diluite della Medicina Omeopatica”
La Medicina Biologica, 2007, Vol. 4, 235-39

11. V. Elia, E. Napoli, R. Germano
“The “memory of water” an almost deciphered enigma. Dissipative structures in the extremely diluted aqueous solutions of the homeopathic medicine.
Homeopathy, (2007) 96, 163-169

10. V. Elia, L. Elia, E. Napoli, M. Niccoli
“Conductometric and calorimetric studies of serially diluted and agitated solutions: the dependance of intensive parameters on volume”

“Interaction of “extremely diluted solutions” with aqueous solutions of hydrochloric acid and sodium hydroxide. A calorimetric study.”

8. V. Elia, L. Elia, M. Montanino, E. Napoli, M. Niccoli, L. Nonatelli
“Conductometric studies of the Serially Diluted and Agitated Solutions. On an anomalous effect that depends on the dilution process.”

7. V. Elia, L. Elia, P. Cacace, E. Napoli, M. Niccoli, F. Savarese
“Extremely dilute solutions as multi-variable systems. A study of calorimetric and conductometric behaviour as function of the parameter time”
6. V. Elia, M. Marchese, M. Montanino, E. Napoli, M. Niccoli, L. Nonatelli, A. Ramaglia
"Hydrohysteretic phenomena of " Extremely diluted solutions" induced by mechanical treatments. A calorimetric and conductometric study at 25 °C."

5. V. Elia, E. Napoli, M. Niccoli, L. Nonatelli, A. Ramaglia, E. Ventimiglia
"New Physico-Chemical Properties of Extremely Diluted Aqueous Solutions. A calorimetric and conductivity study at 25°C."

4. V. Elia, M. Niccoli
"New Physico-Chemical Properties of Extremely Diluted Aqueous Solutions"

3. V. Elia, S. Baiano, I. Duro, E. Napoli, M. Niccoli, L. Nonatelli
Permanent Physico-chemical properties of extremely diluted aqueous solutions of Homeopathic Medicines.
Homeopathy, 2004, Vol 93, 144-150

2. V. Elia and M. Niccoli
"New physico-chemical properties of water induced by mechanical treatments. A Calorimetric study at 25°C"
Journal of Thermal Analysis and Calorimetry, 2000, Vol. 61, 527-537

1. V. Elia and M. Niccoli
"Thermodynamics of Extremely Diluted Aqueous Solutions"
“No one really understands water. It’s embarrassing to admit it, but the stuff that covers two-thirds of our planet is still a mystery. Worse, the more we look, the more the problems accumulate: new techniques probing deeper into the molecular architecture of liquid water are throwing up more puzzles.” said P. Ball in 2008

Specific Conductivity of EDS vs. Concentration of the Chemical Contents
Heat of Mixing of EDS vs Concentration of the Chemical Contents

\[ -Q_{\text{mix}} / \text{J kg}^{-1} \]

\[ M_{\text{tot}} \]
pH of EDS vs Concentration of the Chemical Contents

V. Elia, E. Napoli, R. Germano

Homeopathy, (2007) 96, 163-169
Evidence for the existence of stable water clusters at room temperature and normal pressure, 2009
Detail
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IJDN – V. Elia, E. Napoli

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<td>0,2</td>
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</tbody>
</table>

¹ Molarità in mol/L⁻¹ ²Initial Conductivity in µS cm⁻¹.

*IJDN – V. Elia, E. Napoli*
Dissipative Structures in Extremely Diluted Solution of Homeopathic Medicines. AMolecular Model based on Physico-Chemical and Gravimetric evidences. 2010, Vol 5, N°1,39-48
Before

After

1. Sample
2. Control

IJDN – V. Elia, E. Napoli
Intervista a Luc Montagnier (1/2)
Intervista a Luc Montagnier (2/2)
Cattura dei segnali

Campione  X 500  Software per l'analisi dei segnali

Solenoid sensore  Amplificatore  Computer

Cross-talk between dilutions (from an E.Coli 0.1 μ filtrate) Montagnier 2009 Interdiscip Sci Comput Life Sci
Electromagnetic Signals of Dissipative Structures and their ageing effects
Specific Electric Conductivity of EDS and H$_2$O at 135 days
Specific Electric Conductivity of EDS and H2O at 541 days

Fig. 6 - Specific Electrical conductivity of EDS (Fullerene) and distilled H2O at 541 days

V. Elia, L. Marrari, E. Napoli, 2011 JTAC, in press
Excess Specific Electric Conductivity of EDS and H$_2$O vs $t$
**Fig. 2** - Specific Electrical conductivity of EDS (Fullerene 7CH) and distilled $\text{H}_2\text{O}$ vs $t$ (days) and Excess Specific Electrical conductivity of EDS vs $t$ (days)

*JTAC - V. Elia, L. Marrari, E. Napoli-
Aqueous Nanostructures In Water Induced By Electromagnetic Fields Emitted by EDS. A Conductometric Study Of Fullerene And Carbon Nanotube EDS. 2011, On line*
Fig. 3 - Specific Electrical conductivity of EDS (Fullerene 9CH) and distilled H$_2$O vs t (days) and Excess Specific Electrical conductivity of EDS vs t (days)

*JTAC - V. Elia,, L. Marrari, E. Napoli- Aqueous Nanostructures In Water Induced By Electromagnetic Fields Emitted by EDS. A Conductometric Study Of Fullerene And Carbon Nanotube EDS. 2011, In press*
Water Bridge
The Effect of Nafion on the Sovramolecular Structure of Water
Glass rod

Air

EZ

Bulk water with microspheres
pH Sensitive Dye(s)

Nafion

EZ dye excluded
The graph shows a linear fit between pH and Log(χ). The data points are represented by red circles, and the linear fit is indicated by a blue line.
Titrations:

- Conductometric
- pHmetric
- Calorimetric
**Conductometric Titration with HCl as titrant**

Conductometric titration graph for NaHCO₃ 1.2x10⁻⁴ M and Sample T163 - AM 12DH.

---

**Reference:**

C.M. Cacace, L. Elia, V. Elia, E. Napoli, M. Niccoli

*Journal Molecular Liquids, 2009, 146, 122-126*
**pHmetric Titration with NaOH as titrant**

V. Elia, E. Napoli, M. Niccoli

*Journal of Molecular Liquids, 2009, Vol 149, 45-50*
Calorimetric Titration with NaOH as titrant

V. Elia, M. Marchese, M. Montanino, E. Napoli, M. Niccoli, L. Nonatelli, and A. Ramaglia
# Thermodynamic parameters for the association between DS and OH ions at 298 K

<table>
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<th>-ΔG° kJ mol$^{-1}$</th>
<th>-ΔG° kJ mol$^{-1}$</th>
<th>TΔS° kJ mol$^{-1}$</th>
<th>MDS *10$^3$ mol L$^{-1}$</th>
<th>M$_{Na^+}$ *10$^4$ mol L$^{-1}$</th>
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DISSIPATIVE STRUCTURES
Combined Volume – Time Effect

P. Belon, V. Elia, L. Elia, M. Montanino, E. Napoli, M. Niccoli
Excess Specific Electric Conductivity vs. Volume

V. Elia, L. Elia, E. Napoli, M. Niccoli
Excess Conductivity vs time of AM 5,6,12,30,200CK

V. Elia, L. Elia, N. Marchettini, E. Napoli, M. Niccoli, E. Tiezzi
The Effect of Filtration Procedures on the Sovramolecular Structure of Water
V. Elia, E. Napoli – IC-MAST 2011 - Accepted
V. Elia, E. Napoli – IC-MAST 2011-Accepted
Fig. 8 - Density vs Specific Electrical Conductivity (See Table 8)
Quando la scienza si arrocca su un certo paradigma, escludendo come pazzo o eretico chi lo contesta, si comporta in modo dogmatico.

Come la mettiamo col fatto che l’innovazione avviene proprio quando qualcuno riesce a mettere in questione il paradigma dominante?

Umberto Eco
“If we knew what it was we were doing, it would not be called research, would it?”

A. Einstein
Thank you for your attention