

1. Record Nr.	UNINA9910788549503321
Autore	Adamatzky Andrew
Titolo	Physarum machines [[electronic resource]] : computers from slime mould // Andrew Adamatzky
Pubbl/distr/stampa	Singapore ; ; Hackensack, N.J., : World Scientific Pub. Co., 2010
ISBN	1-283-14519-7 9786613145192 981-4327-59-X
Descrizione fisica	1 online resource (280 p.)
Collana	World Scientific series on nonlinear science. Series A, Monographs and treatises ; ; v. 74
Disciplina	004 006.3/2
Soggetti	Physarum Physarum polycephalum Computers
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Preface; Acknowledgments; Contents; 1. From reaction-diffusion to Physarum computing; 2. Experimenting with Physarum; 3. Physarum solves mazes; 4. Plane tessellation; 5. Oregonator model of Physarum growing trees; 6. Does the plasmodium follow Toussaint hierarchy?; 7. Physarum gates; 8. Kolmogorov-Uspensky machine in plasmodium; 9. Recon guring Physarum machines with attractants; 10. Programming Physarum machines with light; 11. Routing Physarum with repellents; 12. Physarum manipulators; 13. Physarum boats; 14. Manipulating substances with Physarum machine; 15. Road planning with slime mould EpilogueBibliography; Index
Sommario/riassunto	A Physarum machine is a programmable amorphous biological computer experimentally implemented in the vegetative state of true slime mould Physarum polycephalum. It comprises an amorphous yellowish mass with networks of protoplasmic veins, programmed by spatial configurations of attracting and repelling gradients. This book demonstrates how to create experimental Physarum machines for

computational geometry and optimization, distributed manipulation and transportation, and general-purpose computation. Being very cheap to make and easy to maintain, the machine also functions on a wide range of s
