
List of Publications

In International Refereed Journals

- 1) Gurdeep Kaur, Lavleen Saini, Sandeep Kaur, Shivani Singla, **Neetu Verma** (2026) “The Effect of Gold Nanoparticles on the Structural, Optical, and Emission Properties of Dy³⁺-Doped Bismuth Borosilicate Glasses and Glass Ceramics” *physica status solidi (b)*, 2026; 263:e202500636, <https://onlinelibrary.wiley.com/doi/abs/10.1002/pssb.202500636>
- 2) Deepakshi, Jatinder Kaur, Nancy Mahendru, PrakashKanjariya, Aman Shankhyan, Kartikaya Vashishth, Gopi Sharma, Shivani Singla, Enhanced Thermal Stability and Nonlinear Optical Response in Gold Nanoparticles Dispersed NaO₂-B₂O₃-SiO₂ Glass, *Journal of Materials Science: Materials in Electronics*, 2025.
- 3) Anchal Pathania, Neetu Verma, Rohit Mehra, P Nandi, Gopi Sharma, Sandeep Kaur, Richa Mishra, B Sanyal, Environmentally safe high density lanthanum doped glasses for radiation shielding windows, *Journal of Non-Crystalline Solids*, Volume 666, 2025, 123649. <https://doi.org/10.1016/j.jnoncrysol.2025.123649>
- 4) Haramanpreet Kaur, Raturaj Puranik, Vibhavari Parkar, Snehal Haldankar, Fathimath Faseela, Shriganesh Prabhu, Sandeep Kaur, Neetu Verma, Gopi Sharma, Terahertz-time domain spectroscopy and optical characterization of germanate glass systems for photonic applications, *Journal of Non-Crystalline Solids*, Volume 650, 2025, 123369. <https://doi.org/10.1016/j.jnoncrysol.2024.123369>
- 5) Shivani Singla, Khushi Rajput, Prakash Kanjariya, Karthikeyan Ravi, Gagan Anand, Naveen Kumar, Naveen Bansal, and Gopi Sharma, “Structural, thermal, and optical properties of gold nanoparticle-doped bismuth borate glasses: effect of concentration”, *Journal of Materials Science: Material in Electronics*, vol. 35, pp. 2142, 2024. <https://doi.org/10.1007/s10854-024-13899-1>
- 6) Muskan Sharma, Gopi Sharma, Neha Kumari, Rohit Sharma, Jatinder Kaur, Shivani Singla, “Effect of gold nanoparticle dispersion on the structural, optical and radiation shielding parameters of sodium borate glass”, *Physica Scripta*, volume 99, pp. 095943, 2024. <https://doi.org/10.1088/1402-4896/ad6b5e>
- 7) Abubakar, Gopi Sharma, Asha Rajiv, Anupam Yadav, Jatinder Kaur, Ayush Gandhi, Shivani Singla, “Enhanced broadband-visible photoluminescence properties of gold nanoparticle-dispersed bismuth borosilicate glasses”, *Journal of Materials Science: Material in Electronics*, vol. 35, pp. 1423, 2024. <https://doi.org/10.1007/s10854-024-13201-3>
- 8) Shivani Singla, Nancy Mahendru, Om Prakash Pandey, Neetu Chopra, Gopi Sharma, “Role of

SiO₂ in Tailoring Stability and Nonlinear Optical Behaviour of Gold Nanoparticles in Glass”, Physica Scripta, Vol. 99, 055504, 2024. <https://doi.org/10.1088/1402-4896/ad3493>

- 9) Shivani Singla, Muskan, Basant Lal, Jatinder Kaur, **Gopi Sharma**, “Optical behavior of glasses containing gold nanoparticles: A review”, Optics & Laser Technology, vol. 174, pp. 110675, 2024. <https://doi.org/10.1016/j.optlastec.2024.110675>
- 10) Shivani Singla, Abhishek, Naveen Bansal, Neetu Chopra, **Gopi Sharma**, “Analysis of Gold nanoparticles dispersed Bismuth Borate glass: Effect of Size and Concentration”, Journal of Materials Science: Material in Electronics, vol. 34, pp. 526, 2023. <https://doi.org/10.1007/s10854-023-09964-w>
- 11) Shivani Singla, Sandeep Kaur, Nancy Mahendru, Om Prakash Pandey, Neetu Chopra, **Gopi Sharma**, “Enhanced photoluminescence in Dy³⁺/Au co-doped bismuth borosilicate glass”, Optical Materials, vol. 126, pp. 112236, 2022. <https://doi.org/10.1016/j.optmat.2022.112236>
- 12) Shivani Singla, Venu Gopal Achanta, Om Prakash Pandey, Gopi Sharma (2020) “Influence of the size of gold nanoparticles dispersed in glass matrix on optical properties”, Ceramics International, 96, 2020. <https://www.sciencedirect.com/science/article/pii/S0272884219337691>
- 13) Shivani Singla, Venu Gopal Achanta, Om Prakash Pandey, **Gopi Sharma** (2019) “ Effects of different stabilizers on dispersion of Gold nanoparticles in Bismuth Borosilicate Glass and their Intensity dependent non linear behaviour” Optical Materials, 96, 2019. <https://www.sciencedirect.com/science/article/abs/pii/S0925346719305506>
- 14) Shivani Singla, Om Prakash Pandey, **Gopi Sharma** (2019) “Z-scan study of nonlinear absorption in gold doped borosilicate glass: effect of Dy³⁺” Journal of Non-crystalline solids, 521, 2019. <https://www.sciencedirect.com/science/article/pii/S0022309319303527>
- 15) Shivani Singla, Shriganesh S Prabhu, Om Prakash Pandey, **Gopi Sharma** (2019) “Study on the nature of distribution of gold nanoparticles inside the 30Bi₂O₃:70B₂O₃ glass and its impact on optical behaviour” Journal of Materials Science: Materials in electronics, 30, 2019. <https://link.springer.com/article/10.1007/s10854-019-01738-7>
- 16) Nancy Mahendru, Govind Parsad Kothiyal, Shivani Singla, Mauro Falconier, **Gopi Sharma** (2019) “Photoluminescence and structural characterization of RE doped sodium aluminosilicateoxyfluoride glass and nano glass-ceramics as a function of γ -irradiation dose” Physica Status Solidi (b). <https://onlinelibrary.wiley.com/doi/abs/10.1002/pssb.201900029>

- 17) Neetu Chopra, Sandeep Kaur, Manpreet Kaur, Shivani Singla, Ritika, **Gopi Sharma**, Manmohan Singh Heer (2018) “Optical, Physical and structural properties of Er³⁺ doped low phonon energy vitreous matrices: ZnO-B₂O₃-TeO₂”, *Physica status solidi (a)*, 215, 1700934.
<https://onlinelibrary.wiley.com/doi/full/10.1002/pssa.201700934>
- 18) Shivani Singla, Venu Gopal Achanta, Nancy Mahendru, Shriganesh S. Prabhu, Mauro Falconieri, **Gopi Sharma** (2017) “High refractive index gold nanoparticle doped Bi₂O₃-B₂O₃ glasses for THz frequencies”, *Optical materials*, 72, 91-97.
<https://www.sciencedirect.com/science/article/pii/S0925346717303415>
- 19) **G. Sharma**, R. Bagga, A. Cemmi, M. Falconieri, S. Baccaro (2015) “Spectroscopic investigations on γ -irradiated Eu³⁺ and Dy³⁺ doped oxyfluoride glasses”, *Radiation of Physics and chemistry*, 108, 48-53. <https://www.sciencedirect.com/science/article/abs/pii/S0969806X14004265>
- 20) **Gopi Sharma**, Ruchika Bagga, Nancy Mahendru, Mauro Falconieri, Venu Gopal Achanta, Ashutosh Goel, Shaik Nayab Rasool, Navooru Vijaya (2015) “Influence of lead and cadmium fluoride variation on White light emission characteristics in oxyfluoride glasses and glass-ceramics”, *Journal of luminescence* 159, 38 – 46.
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- 21) N. Mahendru, R. Bagga, K. Sharma, G.P. Kothiyal, M. Falconieri, **G. Sharma**, (2014) “On the influence of lead cadmium fluoride content on thermal, optical and structural properties of oxyfluoride glasses”, “*Journal of Alloys and Compounds*”, 608, 60-65. <https://www.sciencedirect.com/science/article/abs/pii/S092583881400913X>
- 22) R. Bagga, V. G. Achanta, A. Goel, J. M. F. Ferreira, N. P. Singh, D. P. Singh, V. Contini, M. Falconieri, **G. Sharma**, Vol. 36, 198-206 (2013) “Luminescence study of mixed valence Eu-doped nanocrystalline glass-ceramics”, *Opt. Materials*.
<https://www.sciencedirect.com/science/article/pii/S0925346713004709>
- 23) R. Bagga, M. Falconieri, V. G. Achanta, J. M. F. Ferreira, A. Goel, N. P. Singh, Nancy, **G. Sharma**, (2013) “Structural and optical investigation of rare earth doped oxyfluoride glasses”, *Trans. Ind. Ceram. Soc.*, 72 (1), 18-20.
https://www.researchgate.net/publication/261578421_Structural_and_Optical_Investigation_of_Rare_Earth_Doped_Oxyfluoride_Glasses

- 24) R. Bagga, V. G. Achanta, A. Goel, J. M. F. Ferreira, N. P. Singh, D. P. Singh, M. Falconieri, **G. Sharma**, (2013). “Dy³⁺-doped nano-glass-ceramics comprising NaAlSiO₄ and NaY₉Si₆O₂₆ nanocrystals for white light generation”, Mater. Sci. And Engg. B, 178, 218-224. <https://www.sciencedirect.com/science/article/pii/S0921510712005296>
- 25) **G. Sharma**, N. Chopra, N. P. Singh, S. Baccaro, M. Falconieri, (2012) “Qualitative Analysis of Radiation Induced Structural Changes in Alkali Aluminoborate Glasses: Raman Spectroscopy”, Trans. Indian Ceram. S., 71 (4) 198-203.
<https://www.tandfonline.com/doi/abs/10.1080/0371750X.2013.772742>
- 26) N. Chopra, N.P. Singh, **S. Baccaro G. Sharma**, (2012). “UV-vis Spectroscopic Investigation On γ Irradiated Alkali Aluminoborate Glasses”, Physica B, 407, 1209-1213.
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- 27) Monika, M. Falconieri, S. Baccaro, **G. Sharma**, K. S. Thind, and D. P. Singh, (2012). “Role of aluminium oxide in the structure of heavy metal oxide borosilicate glasses”, Phys. Status Solidi A, 209, 1438-1444. <https://onlinelibrary.wiley.com/doi/full/10.1002/pssa.201228027>
- 28) **S. Baccaro, N. Catallo, A. Cemmi, and G. Sharma**, (2011). “Radiation damage of alkali borate glasses for application in safe nuclear waste disposal”, Nucl. Instr. & Meth. B., 269 (2), 167-173. <https://www.sciencedirect.com/science/article/pii/S0168583X10008025>
- 29) **G. Sharma**, V. Rajendran, K. S. Thind, Gagandeep Singh, Amarjit Singh (2009). “Structural investigation of bismuth borate glasses under the influence of gamma- irradiation through ultrasonic studies”, Physica B, 404 (20), 3371-3378.
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- 30) Monika, S. Baccaro, **G. Sharma**, K. S. Thind, D.P. Singh, (2009). “Radiation Effects on PbO-Al₂O₃-B₂O₃-SiO₂ Glasses by FTIR Spectroscopy”, Nucl. Instr. & Meth. B, 267, 817-820.
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- 31) Manupriya, K. S. Thind, Kulvir Singh, **Gopi Sharma**, V. Rajendran (2009). “Influence of addition of Al₂O₃ on physical, structural, acoustical and invitro bioactive properties of phosphate glasses”, Phys. Stat. Sol. (A), 206, 1447–1455.

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- 32) Jarnail Singh, Gurmel Singh, Neetu Chopra, Gagandeep Singh, **Gopi Sharma**(2009). “Structural Characterization of fly ash doped lithium borate Glasses”, Asian J. Chem. 21, 153-156.
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- 35) D. Singh, K. Singh, G. Singh, Manupriya, S. Mohan, M. Arora, **G Sharma**, (2008). “Optical and structural properties of ZnO-PbO-B₂O₃ and ZnO-PbO-B₂O₃ –SiO₂ glasses”. J. of Physics: Condensed Matter, 20, 075228 (6pp).
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- 36) S. Baccaro, Monika, **G. Sharma***, K. S. Thind, Devinder Singh, A. Cecillia (2007). “Analysis of structural modifications in γ -irradiated PbO-B₂O₃-SiO₂ glasses by FTIR spectroscopy”, Nucl. Instr. & Meth. B, 260, 613-618.
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- 39) **G. Sharma**, K. Singh, Manupriya, S. Mohan, H. Singh, S. B. Narang (2006). “Effect of gamma irradiation on optical and structural properties of PbO - Bi₂O₃ -B₂O₃ glasses”, Rad. Phys. & Chem.,75, 959-966.
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- 42) **G. Sharma**, K. Singh, Manupriya, H. Singh, S. B. Narang (2005). " γ -Irradiation effect on the acoustical properties of zinc lead borate glasses", Phys. Stat. Sol. (a), 202(14), 2720-2730. <https://onlinelibrary.wiley.com/doi/abs/10.1002/pssa.200520085>
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In Non-refereed Journals with ISSN and ISBN number

- 1) H. Singh, **G. Sharma**, K. Singh, A. Khanna, R. Nathuram, H. S. Sahota (2002). “Cadmium borate glasses as shielding materials”, J. Med. Phys., 27(3), 168.
- 2) N. Chopra, N. P. Singh, **G. Sharma**, (2012) “Comparative Study for Structure of Alkali Borate Glasses with and without Aluminum Oxide – Density Measurements” Research & Review : Journal of Physics, 1(1), 1-10. (ISSN: 2278-2265)

Full length papers in Proceedings

- 1) H. Kaur et al., "Terahertz Time-Domain Spectroscopic Analysis of Modified Glass Network: A Comparative Study," 2025 50th International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz), Helsinki, Finland, 2025, pp. 1-1, doi: 10.1109/IRMMW-THz61557.2025.11319644.
- 2) H. Kaur et al., "Sodium-Modified Germanate Glasses: Optical and Terahertz Insights," 2025 50th International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz), Helsinki, Finland, 2025, pp. 1-2, doi: 10.1109/IRMMW-THz61557.2025.11320048
- 3) Neetu Chopra, Sandeep Kaur, Om Prakash Pandey, Gopi Sharma and Surbhi Sharma (2021) “Physical, optical and structural characterizations of Dy³⁺ -doped lead borate glasses”, 6th Biennial International Conference on Emerging Trends in Engineering Science and Technology (ICETEST 2020) 17th-19th December 2020, Kerala, India, <https://iopscience.iop.org/issue/1757-899X/1114/1>
- 4) R. Bagga, M. Falconieri, V. G. Achanta, A. Goel, J. M. F. Ferreira, N. P. Singh, **G. Sharma**, (2013). “Environment safe Dy-doped oxyfluoride nano glass-ceramics for light emitting applications”, 4th International Conference on Nanotechnology: Fundamentals and Applications (ICNFA'13), 12-14 August, 2013 at Ryerson University, Toronto, Ontario, Canada. (ISBN: 978-1-927877-00-5)
- 5) N. Chopra, N.P.Singh, S. Baccaro, M. Falconieri, **G. Sharma**, (2013).“Influence of gamma irradiation and aluminium addition on Ramanspectra of sodium borate glasses”, International Conference on Production and Industrial Engineering (CPIE 2013), 29-31 March, 2013 at B. R. Ambedkar National Institute of Technology, Jalandhar, India. Submitted in Journal of Material Engineering (Inderscience Publications).

- 6) N. Chopra, N.P.Singh, S. Baccaro, **G. Sharma**, (2012). “Structural analysis on network modifying role of Al_2O_3 in $\text{K}_2\text{O}-\text{B}_2\text{O}_3$ glass network: Before and after γ -irradiation”, International Conference on Biomedical Engineering & Assistive Technologies, 6-7 December, 2012 at B. R. Ambedkar National Institute of Technology, Jalandhar, India, pp. 612-616. (ISBN-13: 978-81-925454-1-7)
- 7) **G. Sharma**, N. Chopra, R. Bagga, N. P.Singh, S. Baccaro, M. Falconieri, (2012). “Qualitative Analysis of Radiation Induced Structural Changes in Alkali Aluminoborate Glasses: Raman Spectroscopy”, National Symposium on Materials and Processing-2012 (MAP-2012), 10-12 October, 2012 at B. A. R. C, Mumbai, India, pp. 70-75.
- 8) R. Bagga, M. Falconieri, V. G. Achanta, J. M. F. Ferreira, A. Goel, Nancy, **G. Sharma**, (2012). “Structural and optical investigation of rare earth doped oxyfluoride glasses”, National Symposium on Materials and Processing-2012 (MAP-2012), 10-12 October, 2012 at B. A. R. C, Mumbai, India, pp. 258-259.
- 9) N. Chopra, N.P.Singh, G. Sharma, (2012). “ Structural characterization with and without alumina in sodium borate glasses” International Conference on Mechanical and Industrial Engineering (ICMIE), 8 April, 2012 at Goa organised by Interscience Institute of Management & Technology, Karnataka (Orissa), India. (ISBN- 978-93-81693-51-3).
- 10) **G. Sharma**, K. Singh, Manupriya, S. Mohan, A. Singh, S. Bindra, A. Arora and A. Goel, (2005). “Optical & physical properties of lead bismuth borate glasses” National Conference on Advancement in Condensed Matter Physics, 11-12 February, 2005, at Thapar Institute of Engg& Technology, India, pp. 279-283. (ISBN 81-7764-778-4).
- 11) A. Goel, A. Arora, K. Singh, **G. Sharma**, (2004). “Fly Ash-Bismuth Borate Glasses as Radiation Shielding Materials”, Proceedings of International Symposium on Advanced Materials & Processing, 6-8 December, 2004 at Indian Institute of Technology, Kharagpur, pp. 1180-1189.

Papers presented in International and National Conferences

- Awarded with ‘**Best Paper Award**’& Oral presentation on “**Influence of Rare Earth Elements on the radiation shielding properties of lead-free glass materials**” in International Conference on Science, Technology and applications of Rare Earths (ICSTAR-2025), held from 21-23 April, 2025 at Tirupati.

- Paper Presentation on “**Spectroscopic, structural and thermal studies of rare earth doped sodium borotellurite glasses**” September 29-30,2022 at Gandhinagar, Gujrat.
- Shivani Singla, Venu Gopal Achanta, S. Sri Ganesh Parbhu, Om Prakash Pandey, Gopi Sharma, 2019 “Gold nanoparticles doped borate glasses for optical devises” **National symposium on nanostructured materials: structure, properties and applications (NSNM-2019)**, 22-23 February at Jalandhar.
- Shivani Singla, Venu Gopal Achanta, Om Prakash Pandey, Neetu Chopra, Gopi Sharma, 2018 “Z-scan measurement of nonlinear absorption coefficient of Gold nanoparticles doped Bismuth Borosilicate glasses for sensing devices” **International symposium on functional materials: energy and biomedical applications (ISFM-2018)**, 13-15 April at Chandigarh.
- Shivani Singla, Venu Gopal Achanta, Om Prakash Pandey, Neetu Chopra, Gopi Sharma, (2018) “Structural and optical properties of sodium borosilicate glasses containing gold nanoparticles”, **National Conference on Emerging Scenario in Basic and Applied Sciences for Sustainable Development 2018**, 5 April at DAV college Bathinda.
- Shivani Singla, Venu Gopal Achanta, Om Prakash Pandey, Neetu Chopra, Gopi Sharma, (2018) ”Variation in the properties (structural, optical and thermal) of glass with change in the size of gold nanoparticles embedded in the glass”, **National Conference on Material Science Application in Energy & Environment 2018**, 17 March at DAV college Jalandhar.
- S. Singla, S. Kaur, N. Chopra, V. G. Achanta, **Gopi Sharma**, (2017) “Effect of preparation method on the morphology of AuNPs inside 30Bi₂O₃:70B₂O₃ glass”, **International Conference on Advances in Glass Science and Technology 2017**, 23-25 January at CGCRI Kolkata.
- S. Kaur, Shivani, V. G. Achanta, Neetu Chopra, **Gopi Sharma**, (2017) “Characterization of Dy³⁺ doped bismuth borosilicate glasses”, International Conference on Advances in Glass Science and Technology 2017, 23-25 January at CGCRI Kolkata.
- D. Kaur, N. Chopra, G. Sharma, M. Singh, (2017) “Optical Characterization of Dy³⁺ doped borate glasses”International Conference on Advances in Glass Science and Technology 2017, 23-25 January at CGCRI Kolkata.
- D. Kaur, N. Chopra, G. Sharma, M. Singh, (2017) “ Optical studies of Dy³⁺ doped borate glasses”, Recent Advances for Quality Enhancement in Science and Technology, 16-17 January at HMV Jalandhar.

- D. Kaur, N. Chopra, G. Sharma, M. Singh, (2016) “ Spectroscopic investigations on Dy³⁺ doped borotellurite glasses”, Conference on Production and Industrial Engineering, 19-21 December at NIT Jalandhar.
- Shivani, Achanta Venu Gopal, **G.Sharma**, (2015)“Optical Characterization of Au Nanoparticles Doped Bismuth Borate Glass”, National Conference on Functional Glasses/ Glass-Ceramics and Ceramics, 10-12 December at VNIT Nagpur.
- N. Chopra, **G. Sharma**, N. P. Singh,(2012). “Structural characterization of alkali aluminoborate glasses”, National Conference on Materials Science Applications in Energy and Environment, 2-3 March, 2012 at DAV College, Jalandhar, India.
- N. Chopra, **G. Sharma**, N. P. Singh, S. Baccaro, R. Bagga (2010). “Radiation induced coefficient of alkali aluminoborate glasses: Gamma Irradiation” International conference on environmental challenges”, 15-16 October, 2010 at Kanya Maha Vidyalaya, Jalandhar.
- N. Chopra, N. P. Singh, **G. Sharma**, (2009). “Optical and Physical Characterization of alkali borate glasses” International Symposium on Nanostructured Mateials, 28-29 October, 2009 at Kanya Maha Vidyalaya, Jalandhar.
- N. Chopra, N. P. Singh, **G. Sharma**, (2009). “Optical Characterization of sodium borate glasses with different glass modifier” International Symposium on Nanostructured Materials, 28-29 October, 2009 at Kanya Maha Vidyalaya, Jalandhar.
- S. Mohan, K. S. Thind, **G. Sharma** (2009). “Comparison of spectroscopic properties of Nd³⁺ doped sodium oxide and fluoride lead borate glasses” at International Symposium on Nanostructured Materials (ISNM-09) 28-29 October, 2009, at Kanya Maha Vidyalaya, Jalandhar.
- D. Singh, K. Singh, G. Singh, **G. Sharma**, D. P. Singh, B. S. Bajwa (2009). “Thermal analysis of γ -irradiated ZnO-PbO-B₂O₃ glasses” at International Symposium on Nanostructured Materials (ISNM-09) 28-29 October, 2009 at Kanya Maha Vidyalaya, Jalandhar.
- **G. Sharma**, K. Singh, Manupriya, S. Mohan, A. Singh, S. Bindra, A. Arora and A. Goel, (2005). “Optical & physical properties of lead bismuth borate glasses” National Conference on Advancement in Condensed Matter Physics, 11-12 February, 2005, at Thapar Institute of Engg& Technology, India, pp. 279-283.

- **G. Sharma, K. S. Thind** (2003). “Optical properties of zinc lead borate glasses related to structure”, Glass and Optical Materials Division Fall Meeting (GOMD-2003) 12-15 October, 2003 at Corning, New York.